SHOUT
SHARE
IT

2.5.71

BULLETIN

of the

BRITISH ORNITHOLOGISTS' CLUB

EDITED BY

C. W. BENSON

BRITISH MUSEUM
NAT. HIST.
11 MAR 1974
PURCHASED
ZOOLOGY LIBRARY

Volume 89

1969

PRICE SEVEN SHILLINGS AND SIXPENCE

PREFACE

As forecast in the preface to volume 88, in place of nine numbers there are only six in volume 89 of the *Bulletin*. The first contains 32 pages, the remainder 28 each, the number of pages per volume thus still being 172. There has also been a change in the typeface and general lay-out, considered to be for the better.

Thanks are due to Dr. P. J. K. and Mrs J. M. Burton for most kindly compiling the Index; to those who have contributed to the enjoyment of the Club's meetings; and to those who have supported the *Bulletin* by their papers. Thanks are also due to Mr. K. E. Wiltsher, Manager of the Caxton and Holmesdale Press, for his co-operation in the regular production of the *Bulletin*.

Particularly, too, appreciation of the services of the outgoing Editor, Mr. J. J. Yealland, should be recorded. His seven-year period of service is moreover the fourth longest among past Editors.

C. W. BENSON

COMMITTEE 1969

Dr. J. F. Monk, *Chairman* (elected 1968)
Sir Hugh Elliott, *Vice-Chairman* (elected 1968)
C. W. Benson, *Editor* (elected 1969)
D. R. Calder, *Secretary* (elected 1969)
P. Tate, *Treasurer* (elected 1962)
J. H. Elgood (elected 1966)
Mrs. J. D. Bradley (elected 1968)
P. L. Wayre (elected 1968)
R. E. F. Peal (elected 1969)

11 MAR 1974
PURCHASED
ZOOLOGY LIBRARY

OFFICERS OF THE BRITISH ORNITHOLOGISTS' CLUB PAST AND PRESENT

Chairmen

P. L. Sclater	1892–1913
Lord Rothschild	1913–1918
W. L. Sclater	1918–1924
H. F. Witherby	1924–1927
Dr. P. R. Lowe	1927–1930
Major S. S. Flower	1930–1932
Dr. D. A. Bannerman	1932–1935
G. M. Mathews	1935–1938
Dr. A. Landsborough Thomson	1938–1943
D. Seth-Smith	1943–1946
Dr. J. M. Harrison	1946–1949
Sir Philip Manson-Bahr	1949–1953
Colonel R. Meinertzhagen	1953–1956
C. W. Mackworth-Praed	1956–1959
Captain C. R. S. Pitman	1959–1962
Maj.-Gen. C. B. Wainwright	1962–1965
R. S. R. Fitter	1965–1968
Dr. J. F. Monk	1968–

Vice-Chairmen

Lord Rothschild	1930–1931
W. L. Sclater	1931–1932
H. F. Witherby	1932–1933
G. M. Mathews	1933–1934
N. B. Kinnear	1934–1935
H. Whistler	1935–1936
D. Seth-Smith	1936–1937

Vice-Chairmen—*cont.*

Colonel R. Sparrow	1937–1938
Dr. G. Carmichael Low	1938–1939
Hon. Guy Charteris	1938–1939
W. L. Sclater	1939–1940
Dr. D. A. Bannerman	1939–1940
Captain C. H. B. Grant	1940–1943
B. W. Tucker	1940–1943
F. J. F. Barrington	1943–1945
Dr. E. Hopkinson	1943–1945
C. W. Mackworth-Praed	1945–1946
Dr. J. M. Harrison	1945–1946
Sir Philip Manson-Bahr	1946–1947
B. G. Harrison	1946–1947
Lt.-Colonel W. P. C. Tenison	1947–1948
Miss E. M. Godman	1947–1948
Colonel R. Meinertzhagen	1948–1949
Major A. G. L. Sladen	1948–1949
Colonel R. Meinertzhagen	1949–1953
E. M. Nicholson	1953–1956
Captain C. R. S. Pitman	1956–1959
Mrs. B. P. Hall	1959–1962
R. S. R. Fitter	1962–1965
Dr. J. F. Monk	1965–1968
Sir Hugh Elliott	1968–

Editors

R. Bowdler-Sharpe	1892–1904
W. R. Ogilvie-Grant	1904–1914
Dr. D. A. Bannerman	1914–1915
D. Seth-Smith	1915–1920
Dr. P. R. Lowe	1920–1925
N. B. Kinnear	1925–1930
Dr. G. Carmichael Low	1930–1935
Captain C. H. B. Grant	1935–1940
Dr. G. Carmichael Low	1940–1945
Lt.-Colonel W. P. C. Tenison	1945–1947
Captain C. H. B. Grant	1947–1952
Dr. J. G. Harrison	1952–1961
J. J. Yealland	1962–1969
C. W. Benson	1969–

Honorary Secretaries and Treasurers

HOWARD SAUNDERS	1892–1899
W. E. DE WINTON	1899–1904
H. F. WITHERBY	1904–1914
Dr. P. R. LOWE	1914–1915
C. G. TALBOT-PONSONBY	1915–1918
Dr. D. A. BANNERMAN	1918–1919
Dr. PHILIP GOSSE	1919–1920
J. L. BONHOTE	1920–1922
C. W. MACKWORTH-PRAED	1922–1923
Dr. G. CARMICHAEL LOW	1923–1929
C. W. MACKWORTH-PRAED	1929–1935

Honorary Secretaries

Dr. A. LANDSBOROUGH THOMSON	1935–1938
C. R. STONER	1938–1940
N. B. KINNEAR	1940–1943
Dr. G. CARMICHAEL LOW	1943–1945
Lt.-Colonel W. P. C. TENISON	1945–1947
Captain C. H. B. GRANT	1947
W. E. CLEGG	1947–1949
Miss G. M. RHODES	1949–1950
N. J. P. WADLEY	1950–1960
Miss E. FORSTER	1960–1962
Dr. J. G. HARRISON	1962–1964
C. J. O. HARRISON	1964–1965
M. W. WOODCOCK	1965–1969
D. R. CALDER	1969–

Honorary Treasurers

C. W. MACKWORTH-PRAED	1935–1936
Major A. G. L. SLADEN	1936–1942
Miss E. P. LEACH	1942–1949
C. N. WALTER	1950–1962
P. TATE	1962–

LIST OF MEMBERS AS AT 31st OCTOBER, 1969

Amended as follows:

New Members

G. C. Backhurst, P.O. Kabete, Kenya
R. P. Borrett, P.O. Box 8538, Causeway, Salisbury, Rhodesia.
Robert B. Payne, Dept. of Zoology, University of Oklahoma, Norman, Oklahoma 73069, U.S.A.
F. F. Whitehouse, Kelsterton Hall, Flint, Flintshire.

Resigned

Capt. J. N. Humphreys
J. G. Mavrogordato
Miss P. S. Viola

Death

The Committee regret to record the death of Mr. H. G. Deignan.

LIST OF AUTHORS

Annual General Meeting 61–62
Backhurst, C. G.
  A record of *Gallinago stenura* from Kenya 95–96
Backhurst, C. G. and Britton, P. L.
  A record of *Calidris subminuta* from Kenya 121
Bannerman, D. A.
  Recent records new to the North Atlantic Islands 86–88
  Some further records from the North Atlantic Islands 110
Benson, C. W.
  The white-eye *Zosterops maderaspatana* (Linn.) of Menai Island, Cosmoledo Atoll 24
  The relationship of *Turdus pelios bocagei* (Cabanis) and *Turdus pelios stormsi* Hartlaub 133
  See also Stuart Irwin and Roux
Benson, C. W. and Hall, B. P.
  Buphaga Africanoides A. Smith, 1831 a nomem oblitum? 38
Benson, C. W. and Stuart Irwin, m.p.
  The type specimen of *Bubo capensis dillonii* Des Murs and Prévost 3
Borrett, R. P.
  New bird host records for *Icosta minor* (Bigot) (Diptera: Hippoboscidae) from Rhodesia 165
Boswall, Jeffery
  See Urban, Emil K.
Britton, P. L.
  Weights of the Pennant-winged Nightjar 21–24
  Some records of albinism in East Africa 169–171
  See also Backhurst, C. G.
Britton, P. L. and Dowsett, R. J.
  More weights of the Carmine Bee-eater 85–86
Britton, P. L. and Harper, J. F.
  Some new distributional records for Kenya 162–165
Brooke, R. K.
  Further breeding records from Zambia (No. 7) 7–8
  Apus berliozi Ripley, its races and siblings 11–16
  Age characters in Swifts 78–81
  Taxonomic and distributional notes on *Apus acuticauda* 97–100
  The Müller collection of birds from northern Portuguese East Africa .. 145–151
  The tropical African population of *Apus affinis* 166–167
  Hemiprocne coronata is a good species 168–169

Brooke, R. K. and Dowsett, R. J.
The original name of the bustard *Eupodotis afra* 103–104
Brown, R.
See Holness, P. R.
Bulletin of Zoological Nomenclature: Opinion 882 171–172
Bundy, Graham and Morgan, John H.
Notes on Tripolitanian Birds 139–144
Burton, P. J. K.
An abnormality of the hyoid apparatus in a Lapwing (*Vanellus vanellus*) .. 134
Chapman, E. A.
Gambian observations, Winter 1946–47 96
Clancey, P. A.
Falco concolor Temminck in South Africa 10–11
Buphaga Africanoides A. Smith, 1831 a nomen oblitum? 38
An undescribed race of Black-headed Apalis 92–94
See also Wolters, H. E.
Clancey, P. A. and Lawson, Walter J.
A new race of White-breasted Alethe from Mocambique 4–6
Cornwallis, L.
Illustrated talk on the Birds of Fars, S.W. Iran 117
Cowlard, M.
See Holness, P. R.
Cunningham-van Someren, G. R.
Escapes of *Psittacula krameri* and *Agapornis* spp. breeding in Kenya 137–139
Dahm, Anders G.
A Corn-crake, *Crex crex* L., trapped in Kumasi, Ghana 76–78
Dowsett, R. J.
Barred Warbler *Sylvia nisoria* (Bechstein) at Lake Chad 72–73
See also Brooke, R. K.
Desfayes, M.
A possible hybrid *Jynx ruficollis* x *torquilla* 110–112
Field, G. D. and Owen, D. F.
Little Gull in Sierra Leone 94
Fisher, James
A talk, 'Some observations on the present state of palaeornithology 33
Forbes-Watson, A. D.
Ornithological results of the I.U.C.N. survey of Mt. Nimba, Liberia 2–3
Fry, C. H.
An illustrated talk on the bee-eaters with comments on the jacamars .. 33
Goodwin, D.
A new subspecies of the White-quilled Rock Pigeon 131–133
Gray, Betty Jean
See Watson, George E.
Greensmith, A.
See Holness, P. R.
Hall, B. P.
See Benson, C. W.
Harper, J. F.
See Britton, P. L.
Harrison, C. J. O.
A non-melanic variant Bullfinch 20–21
Additional information on the carpometacarpal process as a taxonomic character 27–29
Harrison, James M. and Harrison, Jeffery G.
A goose hybrid with the head pattern of the Giant Canada Goose 31–32
The evolutionary position of the snow geese suggested by certain goose hybrids and variants 39–41
Comments on a wild-shot Pintail x Teal Hybrid 100–103
See also Storey, G. W.

Harrison, Jeffery
The altitude of a migrating Shoveler .. 72
Isabelline Curlews and Turnstone in Eire .. 74–76
Schioler's Dunlin in Eire .. 104–105
Haverschmidt, F.
A Streaked Flycatcher at sea .. 166
Holness, P. R., Cowlard M., Brown, R. and Greensmith, A.
Little Crake *Porzana parva* (Scopoli) breeding in north-eastern Greece 116
Holyoak, David
The function of the pale egg colour of the Jackdaw .. 159
Hoogerwerf, A. and Tekke, M. J.
The White-throated sparrow in the Netherlands—the first record for Continental Europe? .. 9–10
Howes, C. A.
A survey of extinct and nearly extinct birds in the Royal Albert Memorial Museum, Exeter .. 89–92
Hubbard, John P.
Phylloscopus fuscatus (Blyth) in Cyprus .. 116
Lawson, Walter J.
A new name for a race of the Black-headed Oriole .. 16
See also Clancey, P. A.
Loveridge, A.
A Sheathbill, *Chionis alba* (Gmelin) on St. Helena .. 48
McKean, John L.
The Brush Tongue of Artimadae .. 129–130
Mikkola, Kauri
Zonotrichia albicollis in continental Europe .. 68–69
Moreau, R. E.
The Sooty Falcon *Falco concolor* Temminck .. 62–67
Morgan, John H.
See Bundy, Graham
Morony, J. J. Jr.
See Short, L. L.
Munteanu, Dan
Bird migration in Rumania .. 33–35
Olney, Peter
Illustrated talk on Avocets and their Management .. 145
Owen, D. F.
See Field, G. D.
Parkes, Kenneth C.
Some undescribed subspecies of tanagers from South America .. 17–20
An undescribed subspecies of Hepatic Tanager *Piranga flava* from Colombia 81–83
A new subspecies of the Red-crowned Ant Tanager *Habia rubica* from Venezuela with remarks on Colombian populations .. 83–85
Subspecific status of the Small Skylark *Alauda gulgula* in the Philippines, with notes on age characters and moult .. 117–119
Parsons, B. T.
A Record of *Oceanodroma leucorrhoa* from Kenya .. 120–121
Roux, F. and Benson, C. W.
A note on *Sarothrura lugens* .. 67–68
The Buff-spotted Flufftail *Sarothrura elegans* in Ethiopia .. 119
Sage, Bryan L.
Abnormal plumage variations in the Red-headed Weaver .. 35–38
A Northern Pintail x Chiloe Wigeon hybrid .. 69–71
Scott, R. E.
Corvus frugilegus Linnaeus with fourteen rectrices .. 109
Short, L. L. and Morony, J. J. Jr.
Notes on some birds of central Peru .. 112–115
Smith, Peter A.
Observations from the interior of Muscat and Oman during 1966–1967 .. 52–60
Special General Meeting .. 1–2

STOREY, G. W. and HARRISON, JAMES M.
  Comments on an intersexual bulbul .. 160–162
STUART IRWIN, MICHAEL P.
  Ardeola idae Hartlaub in Rhodesia .. 3–4
  Camaroptera stigmosus (Reichenow), the male breeding dress of *Camaroptera fasciolata* (Smith) .. 44–48
  See also BENSON, C. W.
STUART IRWIN, MICHAEL P. and BENSON, C. W.
  Symmetrical albinism, a possible secondary sexual character in the Black Cuckoo-Shrike *Campephaga phoenicea* (Latham) .. 42–43
SULTANA, J.
  The Tree Sparrow (*Passer montanus*) breeding in the Maltese Islands .. 29
TEKKE, M. J.
  See HOOGERWERF, A.
TUCK, G. S.
  An illustrated talk on Seabirds of the World .. 62
URBAN, EMIL K. and BOSWALL, JEFFERY
  Bird observations from the Dahlak Archipelago, Ethiopai .. 121
WATSON, GEORGE E.
  The status of the Black Noddy in the Tristan da Cunha Group .. 105–107
  See also WETMORE, ALEXANDER
WATSON, GEORGE E. and GRAY, BETTY JEAN
  Replacement name for *Acrocephalus agricola brevipennis* (Servetzov) .. 8
WETMORE, ALEXANDER
  A talk on the Birds of Panama .. 89
WETMORE, ALEXANDER and WATSON, GEORGE E.
  The generic name for the Dovekie or Little Auk .. 6–8
WELLER, MILTON W.
  An unreported hybrid *Metopiana peposaca* x *Anas georgica* .. 49–52
WOLTERS, H. E. and CLANCEY, P. A.
  A new race of Green-headed Oriole from southern Mocambique .. 108–109

INDEX TO SCIENTIFIC NAMES

11 MA. 1974

Generic and specific names are indexed. Only new subspecific names are included. These are indexed under the generic and the subspecific names.

abdimii, Ciconia 123
— Sphenoryhnchus 123
abessynicus, Cypselus 167
Acanthiza 28
Accipiter tachiro 148
Acrocephalus 127, 129, 165
— agricola 8
— arundinaceus 127, 158, 165
— gracilirostris 170
— schoenobaenus 158
— scirpaceus 56, 158
— stentoreus 128
acuta, Anas 69, 101, 102
acuticanda, Apus 97
acuticauda, Apus 78, 79, 97, 98
acutirostris, Heteralocha 92
additus, Oriolus larvatus 16
adjacens, Apalis melanocephala 93, 94
adsimilis, Dicrurus 10, 150, 170
Aegithalos 28
aequatorialis, Apus 3, 14, 63, 78, 79, 149
aereus, Ceuthmochares 148
aerobates, Apus affinis 167
Aeronautes 79
aeruginosus, Circus 141
Aesalon, Falco 171
aesalon, Falco 171, 172
aethereus, Phaethon 88, 123, 128, 129
aethiops, Myrmecocichla 170
afer, Turtur 8
affinis, Apus 78, 80, 97, 149, 152, 166, 167
afra, Eupodotis 103, 104
— Otis 104
Africanoides, Buphaga 38
africanoides, Buphaga 38
africanus, Bubo 3, 149
Agapornis 137
— fischeri 138
— personata 138
agricola, Acrocephalus 8
Agrobates galactotes 55
Alaemon alaudipes 53
alario, Serinus 194
Alauda arvensis arvensis 117, 118
— gulgula 117, 118
— Rubescens 171
— rubescens 171, 172
alaudipes, Alaemon 53
alba, Calidris 143
— Chionis 48
— Crocethia 125
— Egretta 140
— Motacilla 54, 127
— Platalea 123
— Tyto 53, 148
albicollis, Ficedula 158
— Merops 22
— Zonotrichia 9, 68
albifrons, Sterna 152
albipennis, Petrophassa 131–133
alboniger, Oenanthe 53
albus, corvus 128
Alcedo semitorquata 149
alchata, Pterocles 152
Alethe fuelleborni 4–6
Alethe fuelleborni xuthura, ***subsp. nov.*** 4–6
alexandri, Apus 79
alexandrinus, Charadius 124
Alle 6
alpina, Calidris 104, 105
amazonica, Euphonia chlorotica 18, 19
Ammomanes deserti 53
Ammoperdix heyi 53
ampelinus, Hypocolius 29
anaethetus, Sterna 126, 128, 129
Anaplectes 37
— melanotis 35
Anas 39, 51
— acuta 69, 101, 102
— — × crecca 101, 102
— — × sibilatrix 69
— clypeata 39
— — 72, 103
— crecca 40, 53, 100, 103
— — × formosa 100
— — × acuta 101, 102
— cyanoptera 39
— discors 39
— formosa 100, 102, 103
— — × crecca 100
— georgica 49, 51
— — × Metopiana peposaca 49, 51
— penelope 39, 103
— — × sibilatrix 39
— platalea 39
— queruedula 39, 140
— rhynchotis 39
— rubripes 88
— sibilatrix 39, 69
— — × acuta 69
— — × penelope 39
— smithi 39
— strepera 40
Anhinga 6
Anous minutus 105
— stolidus 105–7
— tenuirostris 105–107
Anser 41
— hybrids 41

Anser hybrids, anser 39, 41
— — × Branta canadensis 39
— — × Branta leucopsis 39
— arvensis 88
— caerulescens 39, 41
Anthochaera 28
Anthreptes longuemarei 150
Anthus 165
— campestris 158
— novaeseelandiae
— spinoletta 154
— trivialis 55, 158
Apalis chirindensis 92
— melanocephala 92–94
Apalis Melanocephala adjacens *subsp. nov.* 93, 94
Apaloderma narina 149
Aphelocephala 28
apiaster, Merops 55, 152
apivorus, Pernis 141
Apus 78, 80
— acuticanda 97
— acuticauda 78, 79, 97, 98
— aequatorialis 13, 14, 63, 78, 79,149
— affinis 78, 80, 97, 149, 152, 166, 167
Apus affinis aerobates *nom. nov.* 167
Apus alexandri 79
— apus 12, 14, 15, 55, 78, 80, 98, 152
— barbatus 13, 14, 15, 79, 149
— berliozi 11–15, 79
Apus berliozi bensoni *subsp. nov.* 12–16
Apus bradfieldi 13–15, 79
— caffer 79
— horus 79
— kapnodes 13
— melba 79, 152
— nakuruensis 13
— niansae 13–15, 79
— pacificus 79, 97
— pallidus 11, 13–15, 55, 63, 79, 152
— shelleyi 13
— somalicus 13
aquaticus, Rallus 142
Aquila chrysaetos 141
— pomarina 141
arabs, Ardeotis 124
Ardea cinerea 140
— goliath 123
— purpurea 140
ardeola, Dromas 125
Ardeola ibis 60
— idae 3, 4
— ralloides 4, 140
Ardeotis arabs 124
ardosiacus, Falco 63
Arenaria interpres 76, 125
arnoti, Myrmecocichla 150
arquata, Numenius 74, 125, 169
Artamus 28, 129, 130
— cinereus 130
Artamus cyanpoterus 130
— leucorhynchus 130
— superciliosus 130
arundinaceus, Acrocephalus 127, 158, 165
arvensis, Alauda 117, 118
— Anser 88
asiatica, Cinnyris 53
asiaticus, Charadius 74
Asio flammeus 54
atacamensis, Cinclodes 113
Athene noctua 53
atra, Fulica 53, 110, 142
— Otis 104
atrococcineus, Laniarius 37
audouinii, Larus 144
Auripasser luteus 128
australis, Treron 148
Aythya 39, 51

barbatus, Apus 13–15, 79, 149
— Pycnonotus 160, 161, 169, 170
batasiensis, Cypsiurus 79
bengalensis, Sterna, 126 129, 152
bensoni, Apus berliozi 12–16
bergii, Sterna 126
berliozi, Apus 11–16, 79
biarmicus, Falco 123, 142
bilineatus, Pogoniulus 43
boehmi, Chaetura 149
— Merops 149
— Neafrapus 149
Bombycilla garrulus 29
bonelli, Phylloscopus 155
boothi, Petrophassa albipennis 132, 133
borbonica, Zosterops 24
borealis, Numenius 89, 90
borin, Sylvia 158
brachyura, Camaroptera 47, 170
bradfieldi, Apus 13–15, 79
Bradypterus carpalis 163
— graueri 162, 163
Branta 32, 39
— hybrids 41
— canadensis 32, 39
— — × leucopsis 32
— — × Anser anser 39
— leucopsis 32, 39
— — × Anser anser 39
brevicauda, Muscigralla 114
brevipennis, Calamodyta 8
— Salacaria 8
Bubo africanus 3, 149
— capensis 3
Buccanodon leucotis 149
bullocki, Merops 86
Buphaga Africanoides 38
— africanoides 38
Buphagus erythrorhychus 38
Burhinus oedicnemus 144
buryi, Sarothrura 120

Buteo buteo 55
— rufinus 54
Butorides striatus 123

cabanisi, Emberiza 180
caerulescens, Anser 39, 41
— Lagonsticta 7
caeruleus, Elanus 64, 124
— Parus 156
caffer, Apus 79
Calamocichla 8
Calamodyta brevipennis 8
calandra, Emberiza 153, 156
— Melanocorypha 153
Calandrella cinerea 158
Calidris alba 143
— alpina 104, 105
— ferruginea 143
— mauri 87
— minuta 143
— subminuta 121
— temmincki 143
— testacea 125
Calomoecetor 8
Camaroptera brachyura 47, 170
— chloronota 47
Camaroptera fasciolata 44–7
— lopesi 47
— simplex 47
— stigmosus 44–7
— stierlingi 47, 150
— subcinnamomea 47
— superciliaris 47
Campephaga 28
— lobata 43
— phoenicea 42, 43
Campephilus principalis 92
campestris, Anthus 158
Campylorhynchus 155
— turdinus 115
canadensis, Branta 32, 39
canorus, Cuculus 152
cantillans, Sylvia 64, 154, 158
canus, Larus 88, 144
Capella media 143
capense, Glaucidium 149
capensis, Bubo 3
— Oena 127, 129
— Turnagra 89, 92
capistrata, Salicaria 8
Caprimulgus 54
Carduelis chloris 157
carolinensis, Conuropsis 91
carpalis, Bradypterus 163
caruncalatus, Creadion 92
caspia, Hydroprogne 126
castanops, Ploceus 163
caudacutus, Hirundapus 80
Ceuthmochares aereus 148
Chaetura 80
Chaetura, boehmi 149
Charadrius alexandrinus 124
— asiaticus 74
— dubius 54, 124, 129, 143
— hiaticula 124
— leschenaultii 73, 74, 124, 143
— marginatus 73
— mongolus 73
— pecuarius 73
— squatarola 124
Chen 41
— hyperboreus 88
cherrug, Falco 142
Chersophilus duponti 153
Chamaea 28
Chionis alba 48
chiquera, Falco 96
chirindensis, Apalis 92
Chlamydotis undulata 54, 142
Chlidonias leucoptera 151
— hybrida 151
— niger 151
chloris, Carduelis 157
chlorocephalus, Oriolus 108
Chlorocichla prigoginei 43
chloronota, Camarpotera 47
Chloropeta 163
— gracilirostris 162–4
chloropus, Gallinula 53, 142
chlorotica, Euphonia 18, 19
Chordeiles minor 88
chrysaetos, Aquila 141
chrysoconus, Pogoniulus 162
Chthonicola 28
Ciccaba woodfordii 149
Ciconia abdimii 123
— ciconia 140
Cinclodes atacamensis 113
— fuscus 113
— nigrofumosus 113
Cinclosoma 28
cinerea, Ardea 140
— Calandrella 158
— Motacilla 171, 172
cinereus, Artamus 130
— Xenus 57, 73, 125
Cinnyricinclus leucogaster 150
Cinnyris asiatica 53
Circus 57, 124
— aeruginosus 141
— macrourus 124, 141
— pygargus 124, 141
Cisticola fulvicapilla 150
— juncidis 155
Climacteris 28
clot-bey, Rhamphocorys 153
clypeata, Anas 39, 72, 103
Clytospiza monteiri 164
coelebs, Fringilla 156
Collocallia 78

Colluricincla 28
collurio, Lanius 55, 154
collybira, Phylloscopus 59
Columba livia 53, 110
columbanus, Plantus 6–7
columbarius, Plautus 6
— Plotus 6
comata, Hemiprocne 168
communis, Sylvia 56, 64
Conuropsis carolinensis 91
concolor, Falco 10, 11
— Falco 62–65, 123, 129
Coracias garrulus 55, 157
Coracina 28
— pectoralis 150
corax, Corvus 52, 157
Corcorax 28
coronata, Hemiprocne 168
coronatus, Pterocles 152
Corvus 159
— albus 128
— corax 52, 157
— — × ruficillis 157
— ruficollis 157
— dauricus 159
— frugilegus 109
— monedula 159
— heuglini 150
Coturnix coturnix 59
Cracticus 28
Creadion carunculatus 92
crecca, Anas 40, 53, 100–103
Crex crex 76, 77
crissalis, Habia nubica 83, 85
cristata, Galerida 53, 127, 129, 153
— Lanius 55
Crocethia alba 125
cruentatus, Melanerpes 115
cucullatus, Ploceus 36
Cuculus canorus 152
cupido, Tympanuchus 90
curruca, Sylvia 54
cursor, Cursorius 54, 144
Cyanicterus 83
cyanonota, Euphonia xanthogaster 17, 18
cyanoptera, Anas 39
cyanopterus, Artamus 130
Cyanosylvia svecica 59
Cypseloides lemosi 78
— niger 14, 78, 79
— rutilus 78
Cypselus 97
— abessynicus 167
Cypsiurus 78, 80
— batasiensis 79
— parvus 78, 79

daurica, Hirundo 153
dauricus, Corvus 159
decaocto, Streptopelia 59, 124, 126, 127, 129
Delichon urbica 158
deserti, Ammomanes 53
— Oenanthe 53, 155
deserticola, Sylvia 154
dickinsoni, Falco 148
Dicrurus 28
— adsimilis 11, 150, 170

discors, Anas 39
domescticus, Passer 53, 157
dougalii, Sterna 152
Dromas ardeola 125
dubius, Charadrius 54, 124, 129, 143
duponti, Chersophilus 153

Ectopistes migratorius 91
Egretta alba 140
— garzetta 140
— schistacea 123
Elanus caeruleus 64, 124
elegans Lanius 128
— Sarothrura 119
eleonorae, Falco 10, 66, 124, 142
Emberiza cabanisi 150
— calandra 153, 156
— flaviventris 150
— hortulana 55
— schoeniclus 156
— striolata 156
Entomyzon 28
epops, Upupa 54, 64, 127, 153
Ephthianura 28
Eremopterix nigriceps 53, 127, 129
Erolia maritima 114
— minuta 129
erythropus, Tringa 143
erythrorhynchus, Buphagus 38
estella, Oreotrochilus 113
Estrilda troglodytes 164
Eudromias morinellus 88, 143
Euphonia chlorotica 18, 19
Euphonia chlorotica amazonica *subsp. nov.* 18, 19
Euphonia xanthogaster 17, 18
Euphonia xanthogaster cyanonota *subsp. nov.* 17, 18
Euplectes 35
— gierowii 163, 164
— hordeacea
— orix 36
Eupodotis afra 103, 104
Eurystomus glaucurus 149
excubitor, Lanius 52, 154
exustus, Pterocles 52

falcinellus, Limicola 73, 144
— Plegadis 140

Falco Aesalon 171
  — aesalon 171, 172
  — ardosiacus 63
  — biarmicus 123, 142
  — cherrug 142
  — chiquera 96
  — concolor 10, 11, 62–65, 123, 129
  — dickinsoni 148
  — elenorae 10, 66, 124, 142
  — naumanni 142
  — Peregrinus 171
  — peregrinus 110, 171, 172
  — sparverius 88
  — subbuteo 11, 157
  — tinnunculus 54, 124
  — vespertinus 157
Falcunculus 28
fasciatus, Heiraetus 141
fasciolata, Camaroptera 44–7
ferriginea, Calidris 143
Ficedula albicollis 158
  — hypoleuca 158
  — parva 155
fischeri, Agapornis 138
flammeus, Asio 54
flava, Motacilla 56, 127
  — Piranga 81, 82
flaviventris, Emberiza 150
flavostriatus, Phyllastrephus 150
formosa, Anas 100, 102, 103
Francolinus pondicerianus 53
  — shelleyi 148
Fringilla coelebs 156
frugilegus, Corvus 109
fuelleborni, Alethe 4–6
Fulica atra 53, 110, 142
fuligula, Hirundo 149
fulvicapilla, Cisticola 150
fulvus, Gyps 53
  — Turdoides 156
funebris, Laniarius 169
furcata, Tachornis 79
fuscatus, Phylloscopus 116
fuscus, Cindodes 113
  — Larus 125

galactotes, Agrobates 55
Galbula, Oriolus 16
Galerida cristata 53, 127, 129, 153
  — theklae 153
Gallinago gallinago 129
  — stenura 95
Gallinula chloropus 53, 142
garrulus, Bombycilla 29
  — Coracias 55, 157
garzetta, Egretta 140
Gelochelidon nilotica 88, 151
genei, Larus 144
georgica, Anas 49, 51
gierowii, Euplectes 163, 164
giganteus, Hirundapus 80
glareola, Tringa 129, 143
Glaucidium capense 149
glaucurus, Eurystomus 149
glaucus, Larus 6
goliath, Ardea 123
gracilirostris, Acrocephalus 170
  — Chloropeta 162–4
gracilis, Prinia 129
Grallina 28
graueri, Bradypterus 162, 163
Grevillia robusta 138
Grus japonensis 90
  — leucogeranus 90
  — monachus 90
gulgula, Alauda 117, 118
gulielmi, Poicephalus 138
Gymnorhina 28
Gyps fulvus 53

Habia rubica 83–85
Habia rubica crissalis *subsp. nov.* 83, 85
Habia rubica mesopotamia *subsp. nov.* 84, 85
habroptilus, Strigops 91
haemastica, Limosa 90
Haematopus ostralegus 125
Hagedashia hagedash 96
haliaetus, Pandion 124, 129
Hemiprocne 78, 168
  — comata 168
  — coronata 168
  — longipennis 168
  — mystacea 168
hemprichii, Larus 57, 126, 129
Heteralocha acutirostris 92
heuglini, Cossypha 150
heyi, Ammoperdix 53
hiaticula, Charadrius 124
Hieraetus fasciatus 141
  — spilogaster 148
Himantopus himantopus 129, 144
Hippolais icterina 158
  — olivetorum 72
  — pallida 154
Hirundapus 80
  — caudacutus 80
  — giganteus 80
hirundineus, Merops 149
Hirundo daurica 153
  — fuligula 149
  — obsoleta 153
  — rupestris 153
  — rustica 55, 128, 153, 158
  — smithii 96
hispaniolensis, Passer 29, 157
hordeacea, Euplectes 36
hortensis, Sylvia 154
hortulana, Emberiza 55
horus, Apus 79

hovarum, Zosterops 26
hudsonica, Limosa 90
hybrida, Chlidonias 151
Hydroprogne caspia 126
— tschegrava 152
Hylochelidon 28
hyperboreus, Chen 88
— Larus 6
Hypocolius ampelinus 29
hypoleuca, Ficedula 158
hypoleucos, Tringa 57, 125
— Turdoides 170

ibis, Ardeola 60
icterina, Hippolais 158
idae, Ardeola 3, 4
ignicapillus, Regulus 155
inca, Tangara ruficervix 19, 20
inquieta, Scotocerca 155
interpres, Arenaria 76, 125
isabellina, Oenanthe 54, 155
Ixobrychus minutus 87, 140

jacaina, Volatinia 114
japonensis, Grus 90
jubatus, Rhynochetos 90
juncidis, Cisticola 155
Jynx ruficollis 110–112
— — × torquilla 110–112
— torquilla 110–112, 157, 162

kapnodes, Apus 13
krameri, Psittacula 137, 138

Lagonosticta caerulescens 7
— rubricata 164
— rufopicta 164
— senegala 164
Laniarius atrococcineus 37
— funebris 169
Lanius collurio 55, 154
— cristata 55
— elegans 128
— excubitor 52, 154
— minor 154
— senator 154, 158
lapponica, Limosa 125, 143
Larus audouinii 144
— canus 88, 144
— fuscus 125
— genei 144
— glaucus 6
— hemprichii 57, 126, 129
— hyperboreus 6
— leucophthalmus 126, 129
— malanocephala 144
— minutus 94, 144
larvatus, Oriolus 16
lemosi, Cypseloides 78
leschenaultii, Charadrius 73, 74, 124, 143
Lessonia rufa 114
leucocephala, Oxyura 141
leucogaster, Cinnyricinclus 150
— Sula 88, 123, 129
leucogeranus, Grus 90
leucomela, Oenanthe 55
leuconotus, Nycticorax 148
leucophthalmus, Larus 126, 129
Leucopolius marginatus 96
leucopsis, Anser 39
— Branta 32
leucoptera, Chlidonias 151
leucopyga, Oenanthe 127, 155
leucorrhoa, Oceanodroma 120
leucorhynchus, Artamus 130
leucorodia, Platalea 123, 140
leucotis, Buccanodon 149
— Otus 148
leucura, Oenanthe 155
lichtensteinii, Pterocles 52
Limicola falcinellus 73, 144
Limosa haemastica 90
— hudsonica 90
— lapponica 125, 143
livia, Columba 53, 110
lobata, Campephaga 43
lobatus, Phalaropus 57
locustella, Ortygospiza 8
longipennis, Hemiprocne 168
longuemarei, Anthreptes 150
lopesi, Camaroptera 47
lugens, Oenanthe 56, 155
— Sarothrura 67, 68
Lullula arborea 153
Luscinia luscinia 156
— megarhynchos 158
luteus, Auripasser 128
lynesi, Sarothrura 67, 68

Macrocephalon maleo 89
Marcodipteryx vexillarius 21, 23, 24
macrourus, Circus 124, 141
maculatus, Myiodynastes 166
maderaspatana, Zosterops 24, 25, 26
mahali, Plocepasser 150
makawai, Pogoniulus 43
maleo Macrocephalon 89
Malurus 28
marginatus, Charadrius 73
— Leucopolius 96
maritima, Erolia 114
mauri, Calidris 87
media, Capella 143
mediocris, Nectarinia 150
megarhynchos, Luscinia 158
Melaenornis pammelaina 150
Melanerpes cruentatus 115
Melanitta nigra 141
melanocephala, Apalis 92–94
— Larus 144

melanocephala, Sylvia 154
Melanocorypha calandra 153
melanogaster, Oreotroclulus 113
melanoleucos, Tringa 113
melanotis, Anaplectes 35
melba, Apus 79, 152
Meliphaga 28
Melopsittacus undulatus 138
menaiensis, Zosterops maderaspatana 25, 26
Mergus serrator 141
Merops albicollis 22
— apiaster 55, 152
— bullocki 86
— boehmi 144
— hirundineus 149
— nubicoides 85
— nubicus 85, 86
— orientalis 53
— pusillus 162
— superciliosus 64, 149
— variegatus 162
merula, Turdus 7
mesopotamia, Habia rubica 84, 85
Metopiana peposaca 49, 51
— — × Anas georgica 49, 51
— — × Poecilonetta spinicauda 49
meyeri, Poicephalus 138
migrans, Milvus 124, 141
migratorius, Ectopistes 91
Milvus migrans 124, 141
minor, Chordeiles 88
— Lanius 154
— minuta, Calidris 143
— Erolia 129
minutus, Anous 105
— Ixobrychus 87, 140
— Larus 94, 144
Mirafra rufocinnamomea 149
modesta, Sarothrura 67
modularis, Prunella 154
monacha, Oenanthe 127
Monarcha 28
mobarchus, Grus 90
monedula, Corvus 159
mongolus, Charadrius 73
montanus, Passer 29, 30
monteiri, Clytospiza 164
Monticola saxatilis 55, 156
— solitarius 55, 156
morinellus, Eudromias 88
— Eudromius 143
Motacilla alba 54, 127
— cinerea 171, 172
— flava 56, 127
moussieri, Phoenicurus 156
mozambicus, Serinus 150
Muscicapa striata 55
Musigralla, brevicauda 114
Muscivora tyrannus 114
Myiagra 28
Myiodynastes maculatus 166
myioptilus, Schoutedenapus 79
Myrmecocichla aethiops 170
— arnoti 150
mystacea, Hemiprocne 168
Myzantha 28

nakuruensis, Apus 13
nana, Sylvia 53, 155
narina, Apaloderma 149
naumanni, Falco 142
Neafrapus boehmi 149
nebularia, Tringa 54, 125
Nectarinia mediocris 150
Neophema pulchella 91
Neophron percnopterus 52, 123, 129, 141
Neositta 28
Nephoecaetes 80
Netta 47
— rufina 51, 140
niansae, Apus 13–15, 79
niger, Cypseloides 14, 78, 79
— Chlidonias 151
nigra, Melanitta 141
nigricans, Pycnonotus 160
nigriceps, Eremopterix 53, 127 ,129
nigrofumosus, Cinclodes 113
nilotica, Gelochelidon 88, 151
nisoria, Sylvia 72, 73
noctua, Athene 53
novaeseelandiae, Anthus 165
nubiciodes, Merops 85
nubicus, Merops 85, 86
Numenius arquata 74, 125, 169
— borealis 89, 90
— phaeopus 125
Nycticorax leuconotus 148
— nycticorax 140

obseleta, Hirundo 153
Oceanodroma leucorrhoa 120
ochropus, Tringa 54, 129
ochruros, Phoenicurus 55, 156
oedicnemus, Burhinus 144
Oena capensis 127, 129
Oenanthe 127
— alboniger 53
— deserti 53, 155
— isabellina 54, 155
— leucomela 55
— leucopyga 127, 155
— leucura 155
— lugens 56, 155
— monacha 127
— oenanthe 55
— pileata 150
— xanthoprymna 54
olivetorum, Hippolais 72

Oreoica 28
Oreotrochilus estella 113
  — melanogaster 113
orientalis, Merops 53
  — Pterocles 152
Oriolus chlorocephalus 108
Oriolus chlorocephalus speculifer *subsp. nov.* 108
Oriolus Gabula 16
  — larvatus 16
Oriolus larvatus additus *nom. nov.* 16
Oriolus oriolus 16, 64
orix, Euplectes 36
Orthonyx 28
Ortygospiza locustella 8
ostralegus, Haematopus 125
Otis afra 104
  — atra 104
Otus leucotis 148
Oxyura leucocephala 141

pacificus, Apus 79, 97
Pachycephala 28
  — rufiventris 28
pallida, Hippolais 154
pallidus, Apus 11, 13–15, 55, 63, 79, 152
pammelaina, Melaenornis 150
Pandion haliaetus 124, 129
Panyptila 79
parasiticus, Stercorarius 144
Pardalotus 28
parina, Xenodacnis 115
Parus 28
  — caeruleus 156
  — rufiventris 150
parva, Ficedula 155
  — Porzana 116, 142
parvus, Cypsiurus 78, 79
Passer domesticus 53, 157
  — hispaniolensis 29, 157
  — montanus 29, 30
  — simplex 157
pectoralis, Coracina 150
pecuarius, Charadrius 73
Pelecanus rufescens 123
pelios, Turdus 7, 133, 134
penelope, Anas 39, 103
peposaca, Metopiana 49, 51
percnopterus, Neophron 52, 123, 129,141
peregrinus, Falco 110, 171, 172
Peregrinus, Falco, 171
Pericrocotus 28
Pernis apivorus 141
personata, Agapornis 138
Petronia petronia 157
  — superciliaris 150
Petrophassa albipennis 131–133
Petrophassa albipennis boothi *subsp. nov.* 132–133
Petrophassa rufipennis 131, 132
phaeopus, Numenius 125
Phaethon aethereus 88, 123, 128, 129
Phalaropus lobatus 57
Philomachus pugnax 144
phoenicea, Campephaga 42, 43
phoenicobia, Tachornis 79
Phoenicurus moussieri 156
  — ochruros 55, 156
Phyllastrephus flavostriatus 150
Phylloscopus bonelli 155
  — collybita 59
  — fuscatus 116
  — sibilatrix 158
  — trochilus 64
Piezorhynchus 28
pilaris, Turdus 156
pileata, Oenanthe 150
Pinguinus 6
Piranga flava 81, 82
Piranga flava toddi *subsp. nov.* 82
Pityriasis 29
Platalea alba 123
  — leucorodia 123, 140
platalea, Anas 39
Platysteira 43
Plautus 6
  — columbarius 6
  — columbanus 6, 7
Plectorhyncha 28
Plegadis falcinellus 140
Plocepasser mahali 150
Ploceus castanops 163
  — cucullatus 36
Plotus 6
  — columbarius 6
plumata, Prionops 150
podiceps, Podilymbus 110
Podiceps ruficollis 59, 140
Podilymbus podiceps 110
Poecilonetta spinicauda 49
Poecilonetta spinicauda × Metopiana peposaca 49
Pogoniulus bilineatus 43
  — chrysoconus 162
  — makawai 43
Poicephalus gulielmi 138
  — meyeri 138
  — robustus 148
Poliolais 47
Polyboroides radiatus 148
pomarina, Aquila 141
Pomatostomus 28
pondicerianus, Francolinus 53
Porzana parva 116, 142
  — porzana 59, 142
  — pusilla 60, 142
praetermissa, Zosterops 26
prigoginei, Chlorocichla 43
principalis, Campephilus 92
Prinia gracilis 129

Prionops plumata 150
— retzii 150
— scopifrons 150
pristoptera, Psalidoprocne 149
Promerops 28
Prunella 28
Prunella modularis 154
Psaldioprocne pristoptera 149
Psephotus pulcherrimus 91
Psittacula krameri 137, 138
Pterocles 152
— alchata 152
— coronatus 152
— exustus 52
— lichtensteinii 52
— Orientalis 152
— senegallus 52, 126, 152
Ptyonoprogne rupestris 53
pugnax, Philomachus 144
pulchella, Neophema 91
pulcherrimus, Psephotus 91
purpurea, Ardea 140
pusilla, Porzana 60, 142
pusillus, Merops 162
Pycnonotus 160
— barbatus 160, 161, 169, 170
— nigricans 160
pygargus, Circus 124, 141
Pyrrhula pyrrhula 20, 87

querquedula, Anas 39, 140

radiatus, Polyboroides 148
ralloides, Ardeola 4, 140
Rallus aquaticus 142
Regulus 28
— ignicapillus 155
repressa, Sterna 129
retzii, Prionops 150
Rhamphocorys clot-bey 153
Rhipidura 28
Rhynochetos jubatus 90
Riparia riparia 56, 158
robusta, Grevillea 138
robustus, Poicephalus 148
roseogrisea, Streptopelia 126, 127
rossi, Anser 41
rubica, Habia 83–85
rubricata, Lagonosticta 164
rubripes, Anas 88
rufa, Lessonia 114
rufescens, Pelecanus 123
ruficervix, Tangara 19, 20
rufina, Netta 51, 141
rufinus, Buteo 54
ruficollis, Corax 157
— Jynx 110–117
— Podiceps 59, 140
— Turdus 54
rufipennis, Petrophassa 131, 132
rufiventris, Pachycephala 28
— Parus 150
ruficinnamomea, Mirafra 149
rufopicta, Lagonosticta 164
rupestris, Hirundo 153
— Ptyonoprogne 53
rüppelli, Sylvia 154
rustica, Hirundo 55, 128, 153, 158
ruticilla, Setophaga 88
rutilis, Cypseloides 78

Salacaria brevipennis 8
— capistrata 8
sarda, Sylvia 155
Sarothrura 68
— bury 120
— elegans 119
— lugens 67, 68
— lynesi 67, 68
— modesta
saxatilis, Monticola 55, 156
schistacea, Egretta 123
schoeniclus, Emberiza 156
schoenobaenus, Acrocephalus 158
Schoutedenapus myioptilus 79
scirpaceus, Acrocephalus 56, 158
scopifrons, Prionops 150
Scotocerca inquieta 155
Seisura 28
semitorquata, Alcedo 149
senator, Lanius 154, 158
senegala, Lagonosticta 164
senegalensis, Streptopelia 53
— Zosterops 150
senegallus, Pterocles 52, 126, 154
Serinus alario 104
— mozambicus 150
serrator, Mergus 141
Setophaga ruticilla 88
shelleyi, Apus 13
— Francolinus 148
Sheppardia 4
sibilatrix, Anas 39, 69
— Phylloscopus 158
simplex, Camaroptera 47
— Passer 157
Sitta 28
skua, Stercorarius 144
smithi, Anas 39
smithii, Hirundo 96
solitarius, Monticola 55, 156
somalicus, Apus 13
sparverius, Falco 88
speculifer, Oriolus chlorocephalus 108
Sphenorhynchus abdimii 123
spilogaster, Hieraetus 148
spinicauda, Poecilonetta 49
spinoletta, Anthus 154
squamata, Tachornis 79
squamiceps, Turdoides 52

squatarola, Charadrius 124
stagnatilis, Tringa 143
stentorius, Acrocephalus 128
stenura, Gallinago 95
Stercorarius parasiticus 144
— skua 144
Sterna albifrons 152
— anaethetus 126, 128, 129
— bengalensis 126, 129, 152
— bergii 126
— dougallii 152
— repressa 129
— stolida 106
stierlingi, Camaroptera 47, 150
stigmosus, Camaroptera 44–7
stolida, Sterna 106
stolidus, Anous 105–7
Strepera 28
strepera, Anas 40
Streptopelia 127
— decaocto 59, 124, 126, 127, 129
— roseogrisea 126, 127
— senegalensis 53
— turtur 57, 157
Streptoprocne 79, 80
striata, Muscicapa 55
striatus, Butorides 123
Strigops habroptilus 91
striolata, Emberiza 156
Struthidea 28
Sturnus vulgaris 54
subbuteo, Falco 10, 157
subcinnamomea, Camaroptera 47
subminuta, Calidris 121
Sula leucogaster 88, 123, 129
superciliaris, Camaroptera 47
superciliosus, Artamus 130
— Merops 64, 149
superciliaris, Petronia 150
svecica, Cyanosylvia 59
Sylvia 72, 128
— borin 158
— cantillans 641, 154, 158
— communis 56, 64
— curruca 54
— deserticola 154
— hortensis 154
— melanocephala 154
— nana 53, 155
— nisoria 72, 73
— undata 154
— rüppelli 154
— sarda 155

tachiro, Accipter 148
Tachornis furcata 79
— phoenicobia 79
— squamata 79
Tanagra xanthogaster 17
Tangara ruficervix 19, 20
Tangara ruficervix inca *subsp. nov.* 19, 20
temminckii, Calidris 143
tenuirostris, Anous 105–7
testacea, Calidris 125
thekla, Galerida 153
tinnunculus, Falco 54, 124
toddi, Pitanga flava 82
torquilla, Jynx 110–112, 157, 162
totanus, Tringa 54, 125
Trachyphonus vaillantii 149
Treron australis 148
Tringa erythropus 143
— glareola 129, 143
— hypoleucos 57, 125
— melanleucos 113
— nebularia 54, 125
— ochropus 54, 129
— stagnatilis 143
— totanus 54, 125
trivialis, Anthus 55, 158
trochilus, Phylloscopus 64
troglodytes, Estrilda 164
— Troglodytes 88
tschegrava, Hydroprogne 152
turdinus, Campylorhynchus 115
Turdoides fulvus 156
— hypoleucus 170
— squamiceps 52
Turdus 28
— merula 7
— pelios 7, 133, 134
— pilaris 156
— ruficollis 54
— viscivorus 156
Turnagra capensis 89, 92
Turtur afer 8
turtur, Streptopelia 57, 157
Turtur tympanistria 148
Tympanuchus cupido 90
tyrannus, Muscivora 114
Tyto alba 53, 148

undulata, Chlamydotis 54, 142
undata Sylvia 154
undulatus, Melopsittacus 138
Upupa epops 54, 64, 127, 153
urbica, Delichon 158

vaillantii, Trachyphonus 149
Vanellus vanellus 134
variegatus, Merops 162
vespertinus, Falco 157
vexillarius, Macrodipteryx 21, 23, 24
viscivorus, Turdus 156
Volatinia jacarina 114
vulgaris, Sturnus 54

woodfordii, Ciccaba 149

xanthogaster, Euphonia 17, 18
— Tanagra 17
xanthporymna, Oenanthe 54
Xenodacnis parina 115
Xenus cinereus 57, 73, 125
xuthura, Alethe fuelleborni 4–6

Zonotrichia albicollis 9, 68
Zosterops 130
— borbonica 24
— hovarum 26
— maderaspatana 24–26
Zosterops maderaspatana menaiensis *subsp. nov.* 25, 26
Zosterops praetermissa 26
— senegalensis 150

Corrigendum

On p. 131, line 4, 'Exhibition' should read 'Expedition'.

11 MAR 1974
PURCHASED

The Caxton & Holmesdale Press, Sevenoaks

571

Bulletin of the

British Ornithologists' Club

Edited by

JOHN J. YEALLAND

Volume 89 No. 1

February 1969

Committee

Dr. J. F. Monk (*Chairman*)
Sir Hugh Elliott, BT. (*Vice-Chairman*)
Mrs. J. D. Bradley
D. R. Calder
Prof. J. H. Elgood
P. Tate (*Treasurer*)
P. L. Wayre
M. W. Woodcock (*Secretary*)
J. J. Yealland (*Editor*)

Dates of meetings to be held during 1969

18th February, 18th March, 15th April, 20th May, 15th July, 16th September, 18th November.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 89 No. 1 Published: 5th February, 1969

The Annual General Meeting of the Club will be held on the 15th April. A further notice will be circulated with the April *Bulletin*.

Special General Meeting

Minutes of the above Meeting held at the Rembrandt Hotel, South Kensington, on Tuesday, 17th December, 1968 at 6 p.m.

Chairman: Dr. J. F. Monk. 19 members were present.

The Chairman opened by saying that the two Resolutions before the Meeting, of which notice had been given, were the result of the Committee's deliberations in the light of the replies to the questionnaire on possible re-constitution of the Club circulated a short time ago. He explained that the Committee had given no clear indication that a re-constitution was wanted, nor any divorce of the *Bulletin* from the dining club, let alone that its publication should cease. There were, however, firm suggestions for fewer issues of the *Bulletin* annually, and fewer dinners. Equally, there was general dis-satisfaction with the price and standard of dinners at the present venue. Minor improvements suggested for the *Bulletin* were in process of being carried out.

The Chairman explained that the Committee had decided to recommend publication of the *Bulletin* in alternate months, starting with a new volume in February, 1969, and to hold dinners in the other alternate months throughout the year. The decision about the *Bulletin* required no change of the Rules, but that over the dinners was embodied in the Resolutions changing Rule 6. At the same time opportunity was taken to make Rule 7 more explicit about the functions of the Annual General Meeting.

The discussion which followed showed general agreement with the proposal to publish the *Bulletin* six times annually in alternate months. The suggestion was also accepted that dinners should be held in alternate months, including the summer, the *Bulletin* continuing to form a convenient medium for announcing the dinners. However, it was pointed out that it would be wiser to frame the Rules governing dinners in such a way that changes to the Rules in the future would need to be infrequent even if changes in frequency and venues became necessary: only a minimum requirement should be stated in the Rules.

Mrs. B. P. Hall, seconded by Prof. J. H. Elgood, therefore moved to make the following and substantive first Resolution:—

> That the first sentence of Rule 6 of the Rules of the Club be altered to read—**'The Club will meet not less than four times a year at a time and place to be arranged by the Committee'.**

This was passed nem. con. The Chairman emphasized that in fact, as agreed, it was the Committee's intention to hold six meetings a year, in January, March, May, July, September and November or December, and as usual on the third Tuesday in those months—but the Club was not tied to this arrangement, which might in any case be impracticable if a new venue were found.

The second Resolution provoked some comment and criticism for its imprecise wording, and also for the early date by which notice of any other business may be given to the Honorary Secretary prior to an Annual General Meeting. After discussion, Sir Landsborough Thomson, seconded by Mrs. D. Bradley, proposed that the first sentence of the proposed new Rule 7 in the second Resolution be amended to read:—

> The Annual General Meeting of the Club shall be held on a date in April or May of each year to be arranged by the Committee, and that '28th February' be substituted for '31st January' in the last sentence.

These amendments were carried unanimously.

The second Resolution therefore reads as follows:—

> That Rule 7 be deleted and the following substituted: **'The Annual General Meeting of the Club shall be held in April or May of each year, on a date to be announced by the Committee. At this Meeting, the business transacted shall be the adoption of the Report of the Committee, the passing of the Accounts of the preceding year, the regulation of matters having reference to the *Bulletin*, the election of Officers and Members of the Committee, and any business of which due notice shall have been given to the Secretary prior to the 28th February in the same year'.**

On being proposed from the Chair, the amended Resolution was carried unanimously.

The Honorary Secretary explained that in 1969 it would not be possible immediately to start meeting in alternate months until July because speakers and dinners had already been arranged for the Rembrandt Hotel up to and including April. The new arrangement would be pursued as soon as possible thereafter.

The Meeting closed at 6.45 p.m.

The six hundred and fifty-fifth meeting of the Club was then held.

Chairman: Dr. J. F. Monk

Members present: 36; Guests 2.

Mr. I. J. Ferguson-Lees gave a well illustrated talk on Lake Chad and the work done there during 1967 and 1968 by members of the B.O.U. expedition and others.

The six hundred and fifty-sixth meeting was held at the Rembrandt Hotel on the 21st January, 1969.

Chairman: Dr. J. F. Monk

Members present: 9; Guests 3.

Mrs. J. D. Bradley showed slides of Rennell Island, its people and some of the fauna. She spoke on an expedition undertaken with her husband during 1953 to this and other islands of the area in order to collect specimens for the British Museum (Natural History).

Mr. A. D. Forbes-Watson also addressed this meeting and he has kindly supplied this summary of his talk.

Ornithological results of the I.U.C.N. survey of Mt. Nimba, Liberia

Mount Nimba lies at the meeting place of Liberia, Guinea and the Ivory Coast, and, rising to nearly 6,000 feet, is one of the highest mountains in

West Africa. The highest point in Liberia was about 4,000 feet, but due to the activities of the Liberian American Swedish Minerals Co. (Lamco J.V.Op. Co.) which is exploiting the very rich deposits of iron ore there, this height is being rapidly reduced. The I.U.C.N. became aware of the situation and the Mt. Nimba Committee (Chairman Dr. Kai Curry-Lindahl) was set up to make investigations and to negotiate for funds to make a thorough survey of the natural history before it was too late. In this they were successful and Lamco has sponsored a research programme. I was asked by the Committee to conduct the ornithological part.

Elsewhere (*U.N.E.S.C.O. Regional Bulletin* [*Africa*] 2, 1967: 31-34) I have reported briefly on my first visit from June—September, 1967. I then spent the whole of 1968 at Mt. Nimba and am working on my collection of skins at the British Museum (Natural History) where the bulk will be deposited. My main report will appear later, but meanwhile taxonomic notes (with descriptions of new forms) and short papers on other matters of interest will be published. Results have been very encouraging—over 100 species have been added to the list of Liberian avifauna and some of these are considerable extensions of range. Many species long considered to be extremely rare were found to be tolerably common. Mt. Nimba itself has no endemic bird, so the destruction of the mountain will affect no species directly, but the results of man's activities there in relation to the ecology of the area are incalculable.

The type specimen of *Bubo capensis dillonii* Des Murs and Prévost

by C. W. Benson and M. P. Stuart Irwin

Received 24th April, 1968

As reported by us (1967: 13), the type of this subspecies is in the Muséum National d'Histoire Naturelle, Paris, and Professor J. Berlioz kindly gave us some information about it which we duly used. In view of its short wing-length, we expressed the opinion that it might in reality be attributable to the species *Bubo africanus* (Temminck) not to *B. capensis* Smith.

In November 1967 we visited the Muséum National d'Histoire Naturelle and thanks to Professor J. Dorst and Dr. F. Roux were able to examine this specimen. We made the wing-length to be 359 mm., but owing to its abraded condition the tail could not be accurately measured. The coloration was typical of *Bubo capensis*, not *africanus*, and according to our measurements of other specimens of *B. c. dillonii* (Benson and Irwin, 1967: 13) it would appear that the specimen is a male.

Thus we can confirm that *dillonii* is correctly placed with *Bubo capensis*, not *africanus*.

Reference:

Benson, C. W., and Irwin, M. P. Stuart, 1967. The distribution and systematics of *Bubo capensis* Smith (Aves). *Arnoldia* (Rhodesia), 3 (19).

Ardeola idae Hartlaub in Rhodesia

by Michael P. Stuart Irwin

Received 16th October, 1968

Though the Malagasy Squacco Heron *Ardeola idae* Hartlaub occurs in the non-breeding season over a wide area in East Africa and the Congo Basin to Zambia, it has not previously been recorded south of the Zambesi River, though Benson and Dowsett (in press for *Puku*) record a Zambian specimen from as far south as Lochinvar Ranch, 16° 00′ S., 27° 15′ E., on the Kafue River.

When in the course of re-arranging the Ardeidae in the collection of the National Museum, Bulawayo, the writer came upon a specimen of *A. idae* collected at Mount Selinda, 20° 24′ S., 32° 40′ E., in the Chipinga District of eastern Rhodesia. Obtained by the late C. Wilde on the 29th September, 1923, it is a male in non-breeding dress with wing 245 mm. Originally labelled *Ardeola ralloides*, it had been housed for many years in the small collection of the Queen Victoria Museum in Salisbury, before being transferred to the National Collection in Bulawayo. At some stage an unknown hand had written in pencil on the label "not Squacco Heron", but had apparently taken the matter no further.

The record of this Malagasy migrant from Rhodesia constitutes a considerable southward extension to the known off-season range and adds a new species to the avifauna of the South African sub-region. It may be noted here that the reference to "Rhodesia" under this species in Moreau (1966: 249) in fact refers to Zambia, when still Northern Rhodesia.

As there are now no less than four specimens from these two territories, it may eventually be shown to be a not uncommon visitor to this general region. It must surely be regular in Moçambique if only on passage and from whence there are still no records. These herons are seldom collected and such few records as exist have come about by chance as the two species would be most difficult to differentiate in the field.

References:

Benson, C. W. and Dowsett, R. J. (in press for *Puku* No. 5). The Occasional Papers of the Department of Game and Fisheries, Zambia.

Moreau, R. E. 1966. *The bird faunas of Africa and its islands*. London, Academic Press.

A new race of White-breasted Alethe from Moçambique

by P. A. Clancey and Walter J. Lawson

Received 2nd August, 1968

During the course of a recent collecting trip to the Manica e Sofala district of Moçambique (June and July, 1968), organised jointly by the Durban Museum and the National Museum of Rhodesia, Bulawayo, a population of the White-breasted Alethe *Alethe fuelleborni* Reichenow was discovered in coastal forest at Dondo, just north of Beira. Unfortunately, only a single specimen was obtained, but as the newly discovered population is a coastal and not montane one, is so isolated from all others of the species and shows good diagnostic characters, we consider it desirable to erect a new subspecies on the basis of the limited material available.

Alethe fuelleborni xuthura, subsp. nov.

Type: ♂, adult. Coastal forest near Dondo, Beira, southern Moçambique (camp at 19° 34′ S., 34° 44′ E.). 20th June, 1968. Collected by P. A. Clancey. In the collection of the Durban Museum. D.M.Reg. No. 23,293.

Description: Similar to *A. f. usambarae* Reichenow, 1905: Mlalo, near Lushoto, Usambara, Tanzania, but mantle and rump less washed with olive, and more like *A. f. fuelleborni* Reichenow, 1900: between the Poroto Mts. and Tandala, south-western Tanzania, in this regard. Below clearer white, the breast without any dusky olivaceous squamation, and dark lateral panels less extended across the breast. Tail and upper tail-coverts uniform pale ochraceous-tawny, not dull chestnut with a darker apical surface to the latter structure as in both *A. f. usambarae* and *A. f. fuelleborni*. Size large, as in *A. f. usambarae:* wing of one 112 mm.

Material: Known only from the unique *Type*.

Range: Currently known only from the evergreen coastal forest at the type-locality, which equals the Mzimbiti of Sheppard and other early workers. Range almost certainly includes the whole of the true coastal forest block which extends east of the *Brachystegia* belt northwards along the Moçambique littoral from about Dondo and Beira.

Measurements of the Type: Wing (flattened) 112, culmen from base 23, tarsus 32, tail 79 mm. Weight 52.3 gm.

Remarks: The discovery of *A. fuelleborni* in the Manica e Sofala district of Moçambique to the south of the Zambesi R. represents a great southward extension of the species' known range. It adds both a new genus and species to the South African list.

The unique specimen of *A. f. xuthura* was collected by P.A.C. as it was perched motionless on a low exposed but shaded branch in a patch of evergreen forest, which at the time of our visit was being sadly mutilated to supply charcoal for the inhabitants of Beira and to make way for primitive cultivation by indigenous Africans. Fortunately, enough pristine coastal forest remains immediately to the north of Dondo on the road to Semaqueza and Muanza to ensure the continued existence of this new form. When first seen, at about 8.15 a.m., the bird was mistaken for a *Sheppardia*, despite the greater size and white, not orange-buff, ventral surface. Despite every effort by the authors and Mr. M. P. Stuart Irwin, no further specimens were taken, though some medium-sized thrush-like birds were seen from time to time in the forest understorey. In the middle of July, Mr. Irwin, of the National Museum of Rhodesia, Bulawayo, again searched forest towards Dondo in an endeavour to locate further examples, but without success.

The colour of the soft-parts of the *Type* were as follows: irides dark umber brown; bill black; legs and toes pale pinkish flesh-colour. The stomach contents consisted of beetle remains.

For the loan of comparative material of both *A. f. usambarae* and *A. f. fuelleborni* we are grateful to our colleague, Mr. Irwin.

The characters of the three races of this species of alethe may be summarised as follows:

(*a*) *Alethe fuelleborni fuelleborni*

Head-top and nape raw umber; mantle and rump redder and about Dresden brown. Underside dull white, washed laterally with grey; dark lateral breast panels extensive and centre of breast squamated with greyish olivaceous. Tail dull chestnut, darkening apically. Wings 102–108 mm.

(*b*) *Alethe fuelleborni usambarae*

Mantle and rump more olivaceous tinged than last, the latter surface less reddish. Below clearer white, the squamation over the centre of the breast reduced. Size greater. Wings 112–120 mm.

(*c*) *Alethe fuelleborni xuthura*

As nominate race above, but clearer white below; lateral breast panels reduced and mesial squamation of olivaceous absent. Tail uniform pale ochraceous-tawny, not chestnut, darkening apically. Size as in *A. f. usambarae*.

The ranges of (*a*) and (*b*) are given by Ripley, in the continuation of Peters' *Check-list of Birds of the World*, vol. x, 1964, p. 62.

ADDENDUM

Since the submission of the above description, we have received information relative to the obtaining of a further specimen of *Alethe fuelleborni xuthura* in coastal forest to the north of the type-locality by Mr. M. O. E. Baddeley, formerly taxidermist at the Durban Museum and now a freelance collector of specimens. The skin of the second Moçambique *A. fuelleborni* is in the collection of the Field Museum of Natural History, Chicago. We are grateful to Major Melvin A. Traylor for confirming the identification.

A third specimen was taken by Mr. Baddeley in montane forest at 3,700 feet a.s.l. on Mt. Gorongosa, in Manica e Sofala, Moçambique, on 22nd October, 1968. This specimen, a ♀ in juv. – prebasic dress, is now in the collection of the Durban Museum. It agrees with the *Type* in the ventral and tail characters attributed to *xuthura*.

The generic name for the Dovekie or Little Auk

by Alexander Wetmore and George E. Watson

Received 27th September, 1968

Two variant spellings proposed simultaneously for the generic name of the Dovekie or Little Auk are in current use. American authors follow Ridgway (1919: 706), Peters (1934: 350), and the A.O.U. Check-list (1957: 248) in using *Plautus* Gunnerus (1761: 263), while most Old World authors follow Hartert (1921: 1768), Hellmayr and Conover (1948: 345), and Vaurie (1965: 504) in using *Plotus* Gunnerus (1761: 263).

From examination of Gunnerus' publication both in the original Danish and in English translation, we consider that neither name is valid.

Gunnerus' name was overlooked until Richmond (1917: 615) brought it to attention, and as first reviser selected *Plautus* over *Plotus*, probably because Gunnerus labelled his plate 6 *Plautus columbanus* (corrected to *columbarius* in the errata in vol. 2), and because Moehring (1752: 65), the earlier reference cited by Gunnerus, gave *Plautus*. For the Latin purist, the classical, south Italian *Plautus* (flat-foot) may be preferred over later and Vulgar north Italian *Plotus*. *Plotus* may be derived also from the Greek adjective *πλωτός* (swimming).

Gunnerus was not consistently binomial in his 1761 paper, even in the sentence in which he cited the names *Plotus* eller *Plautus Columbarius*. The translation of the paragraph in question reads as follows: "If Teisten [the Black Guillemot] is to be called *Plotus columbarius* (Due-Dykkert [Dove-Diver]), then it is to be called *Plotus Columbarius major*, *extremo apice rostri incurvato;* to distinguish it from the little Peder Drikker [Dovekie] that I note one calls *Plotus* or *Plautus Columbarius*."

We, therefore, advocate return to *Alle* Link (1807: 46), a generic name which, unlike *Plotus* and *Plautus*, has not been used for any bird other than the Dovekie. *Plotus* Linnaeus (1766: 218) is a junior synonym of *Anhinga* Brisson (1760: 60). Our action in rejecting *Plautus* Gunnerus 1761, however, eliminates this as a senior homonym of *Plautus* Brünnich (1772: 78), which therefore becomes the senior synonym of *Pinguinus* Bonnaterre (1791: lxxxiii, 28) the current generic name of the Great Auk. Reichenbach (1849–53: V) cited *Plautus* Klein for the Gull "*Larus glaucus* L. Gm." which is *Larus hyperboreus* Gunnerus (1767: 226 [note]).

Plautus Klein in the 1760 (p. 154) German translation of his pre-Linnaean Latin treatise likewise is to be rejected for lack of consistent use of binomials.

We are grateful to Mesdames Lilly Calder and Harriet Jørgensen for translating Gunnerus' work for us, and to Curtis W. Sabrosky, Jr., for nomenclatural advice.

References:
American Ornithologists' Union. 1957. *Check-list of North American Birds*, Baltimore, 5th ed., 691 pp.
Bonnaterre, J. P. 1790–1823. *Tableau Encyclopédique et Méthodique des Trois Règnes de la Nature. Ornithologie.* Paris, 3 vols., 1460 pp. (L. P. Vieillot authored the later parts of this work).
Brisson, A. D. 1760. *Ornithologia.* Paris, vol. 1, 526 pp.
Brünnich, M. T. 1772. *Zoologiae Fundamenta Praelectionibus Academicis Accomodata.* Copenhagen and Leipzig, 253 pp.
Gunnerus, J. E. 1761. Om Nogle Lom-artede Fugle (*Colymbis*). *Trondhiemske Selskabs Skrifter*, 1: 236–270.
— 1767. *In* Knud Leem's *Beskrivelse over Finmarkens Lapper.* Copenhagen, 544 pp.
Hartert, E. 1903–1922. *Die Vögel der paläarktischen Fauna.* Berlin, 2328 pp.
Hellmayr, C. E. and Conover, B. 1948. Catalogue of Birds of the Americas. *Field Mus. Nat. Hist., Zool. Ser.* 13 (part I, no. 3), 383 pp.
Klein, J. T. 1760. *Historie der Vögel.* Danzig, 234 pp.
Link, H. F. 1806–1808. *Beschreibung der Naturalien-Sammlung der Universität zu Rostok.* Rostok (in 6 Abteilungen, 4–6 paged separately; birds are in section 2).
Linnaeus, C. 1766. *Systema Naturae.* XII ed., Stockholm, vol. 1, 532 pp.
Moehring, P. H. G. 1752. *Avium Genera.* Bremen, 88 pp.
Peters, J. L. 1934. *Check-list of Birds of the World.* Cambridge, vol. 2, 401 pp.
Reichenbach, L. 1849–1853. *Avium Systema Naturale* (*Das Natürliche System der Vögel*). Dresden and Leipzig, Natatores.
Richmond, C. W. 1917. Generic names applied to birds during the years 1906 to 1915, inclusive, with additions and corrections to Waterhouse's "Index Generum Avium". *Proc. U.S. Nat. Mus.*, vol. 53, 565–636.
Ridgway, R. 1919. The Birds of North and Middle America. *U.S. Nat. Mus. Bull.* 50 (Part VIII), 852 pp.
Vaurie, C. 1965. *The Birds of the Palearctic Fauna, Non-Passeriformes.* London, 763 pp.

Further breeding records from Zambia (No. 7)

by R. K. Brooke

Received 29th October, 1968

The last paper in this series is Brooke (1967). Since then a number of breeding records have been received from Mr. William Condry the author of *Birds and Wild Africa* (1967, Collins, London). I now draw attention to the most interesting ones and include Mr. Condry's field notes thereon. I am most grateful to him for making his data available. Mr. C. W. Benson has kindly criticised the draft of this paper.

Turdus pelios Bonaparte — Tropical Olive Thrush

At Ndundu near Mbala (formerly Abercorn) a nest was found on 14th January, 1964, containing two young. This date makes it the nest found latest in the season in Zambia. The nest was placed some 25 feet up in a fork near the top of a small tree near the drive to the house. The nest was very like that of the European Blackbird *T. merula* L. A hide was built and the parents showed no adverse reaction to it. The male sang freely nearby until 6th February, the young having flown on 31st January. He seldom helped to feed the young but once fed the female a spider. The female was seen to feed the young on earthworms, some ants and termites and an occasional spider. One youngster disappeared on 19th January. A marked similarity to the European Blackbird was noted in general habits and the alarm call despite the absence of sexual dimorphism in this species. The sexes were identified by behaviour.

Lagonosticta caerulescens Vieillot — Grey Waxbill

At Ndundu a pair were first noted building a nest four and a half feet up in a shrub on the lawn on 23rd January. Building continued until 30th January and was undertaken by both sexes. The nest was retort shaped with a three-inch tunnel entrance and was made of *Rhynchelytrum* grass including the heads and a little fern. All material was obtained from the nearby mushitu (evergreen forest growing in swampy ground and surrounded by grass). Building took place at any time of the day but chiefly in the evenings: sometimes both brought material and sometimes one would bring it to the other waiting in the nest. On 2nd and 3rd February there were eggs in the nest but they were not counted: both parents stayed in the nest for most of the day. On 5th, 6th and 7th February only one parent stayed in the nest and it is assumed that incubation had started. On 8th February the nest was destroyed by Ververt Monkeys *Cercopithecus aethiops* L.

Ortygospiza locustella (Neave) Locust Finch

A nest with eight eggs was found on 13th February among the fish ponds by the Lumi River at Kawimbe near Mbala. The clutch is remarkably large, four to six eggs being usual in the African Estrildidae. The nest itself was a tiny ball of grass placed two inches above very shallow water in emergent vegetation. On 19th February the nest was re-examined and the young were found to have just hatched.

Turtur afer (L.) Blue-spotted Wood-dove

The date given Brooke (1967) is not 14th November, 1963, but 14th September, 1965. The error is regretted.

Reference:

Brooke, R. K. 1967. Further breeding records from Zambia (No. 6). *Bull Brit. Orn. Cl.* 87: 7: 120–122.

Replacement name for *Acrocephalus agricola brevipennis* (Severtzov)

by George E. Watson and Betty Jean Gray

Received 20th September, 1968

As long as the Cape Verde Island Cane Warbler *Calamodyta brevipennis* Keulemans (1866, Nederl. Tidjsch. Dierk. 3: 368) was retained in the African genera *Calomoecetor* or *Calamocichla*, it caused no problem of homonymy. But when Chapin (1949, pp. 7–16 in Mary and Schüz *Ornithologie als Biol. Wissensch.* Heidelberg) and White (1952, *Ibis* 94: 658–686) merged *Calamoecetor* and *Calamocichla* with *Acrocephalus*, *Calamodyta brevipennis* Keulemans became the senior homonym of *Salacaria brevipennis* Severtzov (1872, Imp. Obshch. Lyubit. Est. Antropol. Etnoghr. Izv. [1873] 8: 127). This name is applied by Vaurie (1959, *The Birds of the Palearctic Fauna*, Passeriformes: 241) and Ripley (1961, *A synopsis of the Birds of India and Pakistan*: 467) to worn and dull coloured breeding and migrant Paddyfield Warblers, *Acrocephalus agricola*. Brightly coloured *agricola* are only known from migrants collected in both Pakistans, India, Assam and Burma from November to April. Williamson (1963, *Identification for Ringers* 1: 40–41), who believes that "*brevipennis*" is only a "phase" resulting when the feather tips wear off *agricola*, regards *agricola* as monotypic. If a substitute name is required for *Salicaria brevipennis* Severtzov, *Salicaria capistrata* Severtzov (*ibid*) is available. On the authority of Menzbier (*in litt.*), Pleske (1890, *Ornithographia Rossica* II: 552–60) cites *S. capistrata* as a synonym of *Acrocephalus agricola* (Jerdon) in addition to *S. brevipennis*. He also lists two male specimens collected by Severtzov (11646 and 11647) in the Leningrad Zoological Museum as belonging to the type series.

The White-throated Sparrow in the Netherlands—the first record for continental Europe?

by A. Hoogerwerf and M. J. Tekke

Received 2nd September, 1968

On 28th September and 8th October, 1967, two specimens of *Zonotrichia albicollis* (Gmelin) were captured in the western part of the Netherlands (province of Zuid Holland): the first was obtained on a plot of fallow land, the second on harvested ground not farther than two miles from the first.

After comparison with some skins obtained from the Museum of Natural History in Leiden, it soon became certain that we had to do with this species.

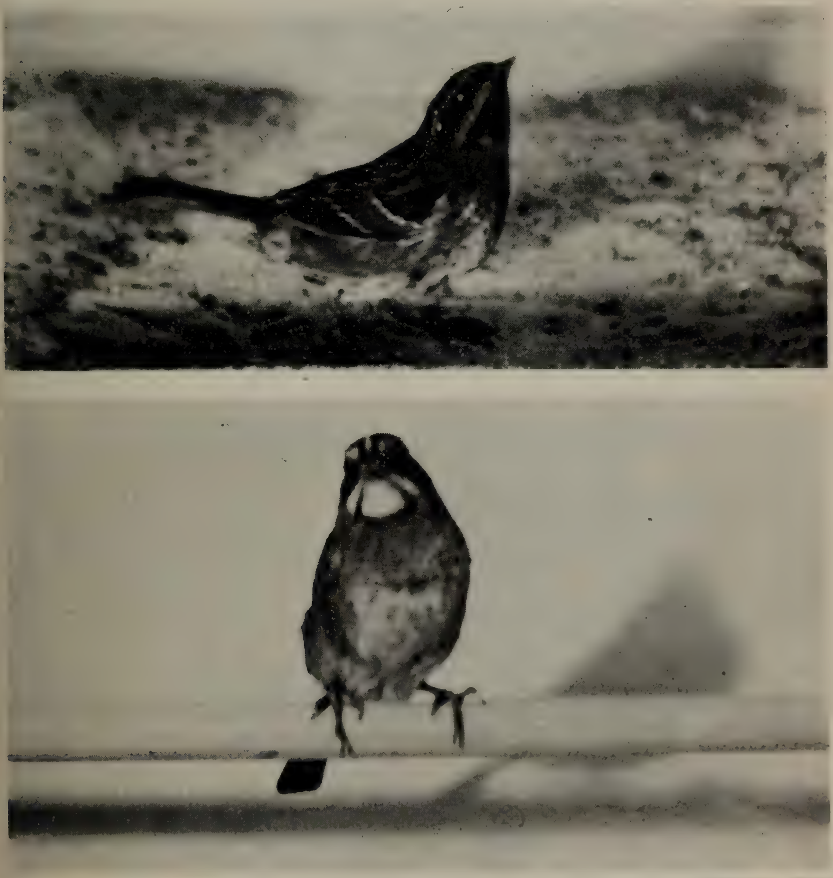


Photo: M. J. Tekke

Zonotrichia albicollis caught in the Netherlands.

The strikingly white throat and yellow streak between culmen and eye were clearly observable characters; also the resemblance to the House-sparrow in pattern and colour of wings and upper parts was conspicuous.

In *A Field Guide to the Birds of Britain and Europe* (Peterson, Mountfort and Hollom [1954]) this species is mentioned as occasionally visiting Britain.

The Dutch specimens did not show wear or abrasion in the plumage, nor were there other signs in appearance or behaviour of the birds having been in captivity, and living specimens in captivity are not known in Holland. This makes it almost certain that they were not escaped cage birds.

Mr. J. A. Smith (*British Birds* Rarities Committee) kindly gave us information concerning representatives of the species up till now found in the British Isles:

18th May, 1909: 1 ♂ shot at Flannan Islands, Scotland.
19th May, 1961: 1 specimen observed at Needs, Oar Point, near Beaulieu, Hampshire.
17th June, 1965: 1 captured at Walney, Lancashire.
21st October, 1967: 1 caught and seen between 15th October and 7th November, 1967, at Bardsey.

Regarding this last bird, observed in England during about the same period as the birds found in Holland, Mr. Smith gives the following particulars: "The bird at Bardsey was first seen on 15th October, 1967, trapped on 21st October and last seen on 7th November and in its first year plumage. Like your birds it showed no signs of wear or abrasion on its plumage. Enquiries recently made into the question of escapes show that few are kept in captivity and no escapes are known. The record has been accepted by the Rarities Committee."

In addition Mr. Smith writes: "Quite a lot of American birds were recorded last autumn and it does not seem likely that this British record would relate to the same birds as those trapped in your country. Whether or not these birds received some assistance by ship on passage can probably never be determined, but many of these birds that came over last autumn are of species which could not have been assisted in this matter."

British observations during the autumn of 1967 of seven American bird species, all except one from October, is reported in *British Birds* (60, 1967: 536). The present authors are of the opinion that both specimens captured in the Netherlands form a strong indication that some of these American migrants reached continental Europe.

The birds, which seem to be the first known from Europe's mainland, are still alive and thriving in captivity; when they die one will be presented to the Leiden Museum, the second to the British Museum of Natural History. The photographs illustrating this communication were taken shortly after the birds had been trapped.

We thank Mr. J. A. Smith of *British Birds* Rarities Committee and thanks are also due to Dr. G. F. Mees of the Museum of Natural History at Leiden for loaning us some skins for comparison.

Falco concolor Temminck in South Africa

by P. A. Clancey

Received 21st August, 1968

Vaurie (*Birds Palearctic Fauna*, 2, 1965: 227) gives the breeding range of the uncommon Sooty Falcon *Falco concolor* as north-eastern Africa from eastern Libya to the Nile Delta (thence further east to the Dead Sea Depression), south to the Sudan, the islands in the southern Red Sea, and Somalia; formerly to Mombasa, in Kenya. The species is migratory, spending the non-breeding season in eastern Africa (Lake Victoria and nothern Moçambique), Madagascar, and Mauritius. Information recently assembled by the

Durban Museum shows that the species ranges further south than indicated by Vaurie's account, to reach south-eastern Africa (Natal).

A sub-adult falcon shot at Tongaat, on the Natal North Coast, on 13th December, 1961, was received at the Durban Museum on the following day, when it was identified provisionally as a young Hobby *Falco subbuteo*, though it was noted that it was light grey on the upper parts and the ventral streaking was grey rather than black. At that time this was attributed to possible geographical variation in the young of various *F. subbuteo* populations. The bird was sexed as a ♂; the wing measures 276 and the tail 134 mm. A second falcon, very similar to the 1961 specimen, was received at the Museum on the 13th March, 1967, having been picked up near Durban with a serious (? gunshot) injury to one wing. The bird was a ♂, and the wing 276 and the tail 128.5 mm. Again, the light grey upper parts and grey ventral streaking were noted. On comparing these two birds against the characters given for the juvenal stages of *F. subbuteo* and other small *Falco* spp. in Swann (*Monograph Birds of Prey*, 2, 1936: 353), it was decided that they agreed more or less precisely with those of the juvenal of the Sooty Falcon, differing substantially from the described young of *F. subbuteo* and *F. eleonorae*, the only other two species of comparable proportions known to or likely to occur in south-eastern Africa. As no identified material of *F. concolor* was available in South African museums to confirm the determination, the 1967 specimen was submitted to the Bird Room, British Museum (Nat. Hist.), London, where its identification as a young example of the Sooty Falcon was kindly confirmed by Mrs. B. P. Hall and Mr. Derek Goodwin.

These two records of *F. concolor* from Natal add a new species to the South African list, and throw much additional light on the wintering range of this generally uncommon falcon. It is recorded as being present on Madagascar between November and April. That the south-eastern African littoral may also be a major hibernal area for the Sooty Falcon is lent further support by a visual record of a black falcon made by me in the Botanic Gardens, Durban, on 26th December, 1960. This bird was located perching on a bare branch of a gum tree (*Eucalyptus* sp.), and was being mobbed by Drongos *Dicrurus adsimilis* and other birds. It allowed a close approach, and viewed from below appeared to be wholly sooty black, the breast with a greyish wash, the cere, gape and feet bright lemon yellow. On taking to wing, the bird was seen to have the flight-silhouette of a Hobby. It was noted as not being attributable to any of the birds of prey then known to occur in South Africa, and its identity was left undecided. On the basis of the field characters and the existence of identified specimen material of *F. concolor* now available from the same general area, the 1960 sight record was almost certainly of a fully adult example of the Sooty Falcon.

I am grateful to Mrs. B. P. Hall and Mr. Derek Goodwin, of the Bird Room, British Museum, for their kind help in this inquiry.

Apus berliozi Ripley, its races and siblings

by R. K. Brooke

Received 13th July, 1968

There is in the United States National Museum a series of an *Apus* swift collected by A. D. Forbes-Watson on the south-east coast of Kenya in early December 1964 and late January 1966 which is similar in size and markings to *Apus pallidus berliozi* Ripley (1965) but is darker and averages somewhat larger. For reasons to be given below I consider that it is premature to relate any of the breeding swifts of north-east Africa to palaearctic species and that *berliozi* is a full species. I therefore name the Kenyan birds

Apus berliozi bensoni subsp. nov.

Type: United States National Museum no. 519515; adult female; Kilifi, Kenya; 100 ft. a.s.l.; 26th January, 1966; A. D. Forbes-Watson collector; collector's no. 2690.

Measurements of type: Wing (flattened) 179, culmen 9, tail (to longest, *i.e.* 5th or outermost rectrix) 80, depth of fork (distance between shortest and longest rectrix) 33 mm.

Description: Differs from *Apus berliozi* Ripley in being darker and browner throughout, in being somewhat larger (see Table) and with faint dark shafts to the white throat feathers. There are nine other birds besides the type in the U.S. National Museum which belong to this taxon collected at Gazi, Kilifi and the Sokoke forest all on the south-east coast of Kenya.

The name *bensoni* refers to Mr. C. W. Benson, O.B.E., whose labours on behalf of Ethiopian ornithology are second to none and from whose friendship and guidance I have benefitted so greatly.

The birds collected in late January are in fresh plumage whereas those from early December are in worn plumage which gives them an appearance even browner than when in fresh plumage, let alone than nominate *berliozi*. The type is in fresh plumage. The differences in size and colour show that they are not *b. berliozi* in winter quarters: it is not known whether *b. berliozi* migrates since all specimens were taken in April and May (Ripley and Bond 1966). Little is known of the biology of *bensoni:* Forbes-Watson's labels and a study of the specimens provide what little may be said. No birds were in breeding condition. Most stomachs contained black beetles but some also contained flying ants and/or termites. The moult of the primaries is a symmetrical descending one as is usual in swifts and three of the ten specimens show a tenth (outermost) primary moulting out of step with the rest, a proportion that corresponds closely to that which De Roo (1966) found in *A. apus apus* (L.).

A suitable English name for *A. berliozi* would be "Watson's Swift" since all specimens of both races and all field notes have been collected by A. D. Forbes-Watson.

The type, as well as most paratypes, of *A. b. berliozi* which I examined in the U.S. National Museum are grey with a pale frons but four are brownish and of these one is very brown with a dark frons (U.S.N.M. no. 518012 non-breeding male collected on 17th May, 1964). It is not *bensoni*, which is not as dark below or on the frons. One is tempted to call this a representative of an undescribed race of *barbatus* in view of its dark frons and to relate it to the "large black swifts with pale throats flying . . . in March. None were collected but they were thought to be *Apus apus*" (Forbes-Watson in Ripley and Bond 1966); it differs neither in measurements nor in the shape of its feathers from typical *berliozi*. Such poverty of differentiation between two congeneric species on a small island seems so unlikely that I do not propose to describe another race of *barbatus* despite that species' propensity for colonising and differentiating on islands. The position can always be reviewed if further material warrants it.

It now remains to consider a group of swifts occurring in north-eastern Africa belonging to the genus *Apus* which may be called the barred swifts because they all have to a greater or lesser extent barred underparts due to the basal half of the feathers being pale to medium brown with a dark subterminal band thereafter and a pale to white terminal band of varying width. Lack (1956) elucidated this group and produced an arrangement which has not been seriously controverted and seems unlikely to be in the future. However he was unaware of *berliozi* and *bensoni* since they had not been collected and described when he was working. The largest species is nominate *aequatorialis* (von Müller) of which *reichenowi* Neumann and *schubotzi* Reichenow are synonyms, being based on aberrant individuals. The next in size (see Table) is *barbatus roehli* (Reichenow) of which *kittenbergeri* Madarasz and *lawsonae* (Vincent) are synonyms: *roehli* is smaller and darker than nominate *barbatus* (Sclater) of South Africa and Rhodesia but is so similar in pattern and in the relative proportions of the outer remiges and rectrices that it is the obvious thing to place them as subspecies. The smallest species is *niansae* (Reichenow) of which *shelleyi* (Salvadori), *nakuruensis* (van Someren) and *kapnodes* Friedmann are synonyms. This last form was described after Lack wrote. I have examined the type in Los Angeles: see also White (1967). *A. niansae* resembles *b. roehli* in pattern and the proportions of the outer remiges and rectrices, but is absolutely smaller and breeds contemporaneously on the same hills in Kenya. Nominate *niansae* therefore cannot be conspecific with *roehli*. In northern Somalia there is a swift of the same size, pattern and proportions as *niansae* called *somalicus* (Stephenson Clarke). It seems obvious to regard it as a subspecies of *niansae* since it differs only in being paler brown and with more white on the throat and is allopatric, living in a very arid area in which this type of variation is common. Lack (*op. cit.*), whose views I have summarized, hesitated over the relationship between *pallidus* (Shelley) in the Palaearctic and *barbatus* and *niansae* in the Ethiopian region since they all had similar patterns and proportions and no geographically intermediate forms were known. He inclined to the view that *niansae* was more closely related to *pallidus* apparently because *n. somalicus* is close in general colour to *pallidus* and because *niansae* is smaller than *pallidus*, it being very unusual to find tropical representatives of a species larger or even the same size as temperate ones.

The discovery and description of *berliozi* and *bensoni* complicates an already complex situation. Ripley (1965) placed *berliozi* as a race of *pallidus* on the grounds that in size, colour and proportions it fitted best with that species. The photograph in Ripley and Bond (1966) supports this and shows the large white throat and rather shallowly forked tail of *pallidus* and its races. The discovery of *bensoni* requires a restatement of the whole position since it is a race of *berliozi* on the grounds of similarity of pattern and proportion, the reasons why *barbatus* and *roehli*, *niansae* and *somalicus* are grouped as species. As far as is known *berliozi* and *barbatus* are allopatric: *berliozi bensoni* presumably breeds not far from where it has been found, *i.e.* in the coastal hills of Kenya whereas *barbatus roehli* breeds in hills at higher elevations in the interior of Kenya: the nearest locality from which I have seen material is Isiolo, 300 miles to the north-east. Although similar in size they are not particularly similar, bearing in mind that all barred swifts are alike: in *roehli* the colour is very dark and the pale terminal bands are narrow whereas the opposite holds in *berliozi* and in addition *berliozi* has a pale frons as in *pallidus* which is never present in *barbatus* and its races. The position is similar to that of *barbatus* subspp. and *bradfieldi* (Roberts) in South-West Africa which Lack (*op. cit.*) considered to be conspecific despite differences very similar to those between *barbatus* and *berliozi*. Traylor (1960) has argued against this view pointing out that despite the very close approach of the breeding ranges, no intermediates are known between two clearly dissimilar barred swifts and that the most useful approach is to regard *bradfieldi* as a full species. Traylor (*op. cit.*) only considered the relationship between *barbatus roehli* and *bradfieldi* but the Transvaal Museum, Pretoria, has two specimens of nominate *barbatus* (wing lengths 182 and 185 mm.) taken on 7th September, 1941, at Walvis Bay within the range of *bradfieldi*. Nominate *barbatus* starts breeding in September (Roberts 1939) and it was apparently this form that MacLean (1960) saw in the valley of the Fish River in southern South-West Africa in the breeding season. *Bradfieldi* has a rump paler than the mantle, a character not found in any race of *barbatus*. All this strengthens the view that *bradfieldi* is not conspecific with the *barbatus* group even if they form a superspecies.

The facts do not exist to determine whether *barbatus*, *berliozi*, *bradfieldi* or *niansae* is the most closely related to *pallidus*. Such facts could be provided by anatomical study, by biochemical study or by comparison of recordings of their calls, preferably by all three ways. The last appears to contain the species' own method of identification. In the absence of such data and appreciating the difficulties in obtaining such data on tropical swifts in the near future I consider that the only treatment which reflects the known facts and does not presuppose that we know what we do not know is to treat all five groups as full species.

Vernacular names for swifts are something of a problem since most species have few characters which lend themselves to providing suitable and distinctive names. In these circumstances traditional names carry even greater weight than usual. For the purposes of Ethiopian ornithology the barred swifts can be referred to as *Apus apus* European Swift, *pallidus* Pallid Swift, *aequatorialis* Mottled Swift, *barbatus* African Black Swift (to distinguish it from the American Black Swift *Cypseloides niger* [Gmelin]), *berliozi* Watson's Swift (as already explained), *bradfieldi* Bradfield's Swift, *niansae* Brown Swift. This last is an innovation. Jackson and Sclater (1938) called it the Abyssinian Swift: this has some merit since it is largely restricted to that and adjoining countries, but the species also occurs in Uganda and Congo (Brazzaville). Mackworth-Praed and Grant (1952) called it the Nyanza Swift being a more correct spelling of the place name from which the scientific name was formed. It has a barbarous sound and has the standard deficiency of all place names for species in that it is unduly restrictive in meaning and suggestion. *A. niansae* is paler than the African Black Swift and darker than the Pallid Swift (though this is hardly true of the pale *A. n. somalicus* in Somalia which at any rate is a brown form not greyish as in Watson's Swift) and therefore may properly be called the Brown Swift.

TABLE

Comparative measurements of barred swifts in millimetres and grams.

Notes

1. All linear measurements, except where otherwise noted, were taken by myself in the manner indicated in describing the type of *A. b. bensoni.*
2. No averages are given where less than five figures are available.
3. Weights of *A. a. pekinensis* from Cheng (1963) and the rest from the labels of material examined.
4. The chord of the tomium taken with dividers is considered a more significant measure than is the culmen.

	Wing length	*Tail length*	*4th–5th rectrix*	*Depth of tail fork*	*Chord of tomium*	*Weight*
A. b. berliozi						
♂	164–173 av (18) 168.2	65–76 av (18) 69.1	4.5–8 av (18) 5.9	25–32.5 av (17) 27.6	17.5–20 av (19) 18.7	34–42 av (18) 37.6
♀	156–170 av (11) 165.0	63–69 av (11) 66.2	4–6 av (11) 4.9	23.5–30 av (11) 25.3	18–19.5 av (11) 18.6	37–46 av (11) 40.1

	Wing length	*Tail length*	*4th–5th rectrix*	*Depth of tail fork*	*Chord of tomium*	*Weight*
A. b. bensoni						
♂	168–177	68–77	6–11	26–32	18–19.5	38.5–46
		av (6) 73.2	av (6) 7.8		av (5) 19.0	av (7) 42.4
♀	170–179	76–80	6–9.5	28–35	18.5–20	41.1–51
A .n. somalicus						
♂	144–160	59–64	3–5	18–24	16–17	
	av (5) 150.8					
♀	147–156	62–64	3–4	20–23	16–17	
A. n. niansae						
♂	148–165	59–65	1.5–6.5	19–25	15–19	24–39
	av (44) 154.3	av (13) 61.2	av (38) 3.3	av (22) 22.0	av (35) 18.5	av (20) 32.0
♀	140–161	53–64.5	1.5–5	17–23	15–19	25–37.5
	av (33) 153.2	av (12) 60.6	av (27) 3.0	av (10) 20.6	av (30) 16.7	av (17) 33.0
A. b. roehli						
♂	167–175	67–71	2–4	21–27	17–20	42–46
	av (9) 170.6	av (6) 69.3	av (7) 3.4	av (6) 23.2	av (8) 18.6	av (8) 42.0
♀	166–176	68–71	2–5	22–27	16–20.5	39–50
	av (15) 172.1		av (8) 3.5	av (6) 24.0	av (14) 18.1	av (10) 43.5
A. b. barbatus						
♂	180–184	74	4–5	26	18.5–21	
♀	180		6		19	
A. b. hollidayi (from Benson and Irwin 1960)						
♂	176–179	76				
♀	174–179					
A. bradfieldi						
♂	171–182		1.5–5		17–20	53
	av (7) 177.4		av (6) 3.7			
♀	169–182	62	2–4	17	18–19	44
	av (8) 175.6		av (6) 4.0		av (5) 18.6	
A. a. aequatorialis						
♂	192–213	75–93	4–9	28–30	22–26	84–104
	av (32) 203.7	av (7) 83.3	av (28) 6.5	av (5) 29.0	av (30) 23.7	av (15) 91.6
♀	192–210	80–90	3–8	27–29	21.5–24.5	83–102
	av (20) 203.3	av (5) 87.2	av (18) 5.7	av (5) 28.0	av (19) 23.1	av (11) 94.5
A. p. pallidus						
♂	160–175	62–74	4.5–5.5	22–28	17–19	
	av (6) 166.2	av (6) 68.0	av (6) 4.9	av (6) 25.4	av (6) 17.8	
♀	161–168	64–74	3–5.5	22–28	16–19	
	av (6) 163.0	av (6) 68.0	av (6) 4.4	av (6) 23.8	av (6) 18.1	
A. p. illyricus						
♂	166–179	63–73	4.5–5	26–29	17–19	
♀	165–169	67–74	4	21–28	18–19	
A. p. brehmorum						
♂	167–174	71–76	4–5.5	24–29	16–19	
	av (6) 170.7	av (6) 73.2	av (6) 5.1	av (6) 26.5	av (6) 17.9	
♀	163–171	66–73	3.5–5.5	22–29	16–19	
	av (6) 168.5	av (6) 68.2	av (6) 4.7	av (6) 25.3	av (6) 18.2	
A. a. apus						
♂	164–183	75–80	5–11.5	31–35	16–18	
	av (17) 169.5	av (6) 77.5	av (17) 7.8	av (6) 35.2	av (10) 17.0	av (c. 2000) 43
♀	164–177	69–82	5–11.5	24–34	16–19	
	av (12) 171.2	av (6) 74.5	av (9) 8.2	av (6) 30.3	av (8) 17.4	
A. a. pekinensis						
♂	164–178	72–79	7–10	27–33	16–18	37–41
	av (6) 168.3	av (6) 75.2	av (6) 8.3	av (6) 28.8	av (6) 17.3	
♀	164–174	72–77	7.5–9	28–31	16–18	
	av (6) 170.0	av (6) 74.2	av (7) 8.3	av (6) 29.5	av (7) 17.0	

In *A. apus* the 10th (outermost) primary is distinctly shorter than the 9th whereas in all the other species they are of approximately equal length. The distinctness of the barring is greatest in *aequatorialis;* in descending order thereafter it is *berliozi, pallidus, bradfieldi, niansae, barbatus, apus.*

SUMMARY

Barred swifts are those members of the genus *Apus* whose breast and abdominal feathers have the basal half pale to medium brown, a dark subterminal band and a pale to white terminal band of varying breadth. In the Ethiopian region two species, *apus* and *pallidus*, occur as non-breeding visitors and four species, *barbatus*, *berliozi*, *bradfieldi* and *niansae*, as breeding residents. Reasons for this arrangement are given, not least being the necessity to name *A. berliozi bensoni* subsp. nov. Biological data on this new race are given. Vernacular names are considered and "Watson's Swift" selected for *A. berliozi*.

ACKNOWLEDGMENTS

The work on which this study was based was undertaken while holding a Frank Chapman Memorial grant from the American Museum of Natural History. Dr. S. Dillon Ripley who is studying and reporting on the Forbes-Watson collections has kindly agreed to my describing *A. b. bensoni*. I am obliged to the Directors and Curators of the following institutions for facilities for study: in Africa—the National Museum, Bulawayo and the Transvaal Museum, Pretoria; in Europe—the Alexander Koenig Museum, Bonn and the Koninklijk Museum voor Midden-Afrika, Tervuren; in the United States of America—Louisiana State University Museum of Natural Sciences, Baton Rouge, Field Museum of Natural History, Chicago, Museum of Comparative Zoology of Harvard University, Cambridge, County Museum of Natural History, Los Angeles, American Museum of Natural History, New York, the Academy of Sciences, Philadelphia, U.S. National Museum, Washington, Peabody Museum of Natural History of Yale University, New Haven. Dr. Richard L. Zusi and Mr. Melvin A. Traylor kindly criticized drafts of this paper.

References:

Benson, C. W. and Irwin, M. P. S. 1960. A new form of *Apus barbatus* from the Victoria Falls. *Bull. Brit. Orn. Cl.* 80: 6: 98–99.
Cheng, T-h. 1963. *China's economic fauna.* Transl. JPRS Washington D.C.
De Roo, A. 1966. Age-characteristics in adult and subadult swifts *Apus a. apus* (L.) based on interrupted and delayed wing-moult. *Gerfaut* 56: 2: 113–134.
Jackson, F. J. and Sclater, W. L. 1938. *The birds of Kenya Colony and the Uganda Protectorate.* II. London: Gurney and Jackson.
Lack, D. 1956. The species of *Apus. Ibis* 98: 1: 34–62.
Mackworth-Praed, C. W. and Grant, C. H. B. 1952. *Birds of eastern and north-eastern Africa.* I. London: Longmans, Green and Co.
MacLean, G. L. 1960. Records from southern South-West Africa. *Ostrich* XXXI: 1: 16–25.
Ripley, S. D. 1965. Le martinet pale de Socotra (*Apus pallidus berliozi*). *L'Oiseau et R. F. O.* 35: Sp.: 101–102.
Ripley, S. D. and Bond, G. M. 1966. The birds of Socotra and Abd-el-Kuri. *Smiths. Misc. Coll.* 151: 7: 1–37.
Roberts, A. 1939. Swifts and other birds nesting in buildings. *Ostrich* X: 2: 85–99.
Traylor, M. A. 1960. Notes on the birds of Angola, non-passeres. *Publ. Cult. Comp. Diam. Ang.* 51: 131–186.
White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Lusaka: Government Printer.
— 1967. A recently described African swift. *Bull. Brit. Orn. Cl.* 87: 4: 63.

A new name for a race of the Black-headed Oriole

by Walter J. Lawson

In the *Durban Museum Novitates*, vol. vi, (16), p. 199, 1962, I described a new race of the Black-headed Oriole from the coastal lowlands of Moçambique as *Oriolus larvatus tibicen* Lawson, the type-locality being Panda, in the Inhambane district. Unfortunately I now find that this name is pre-occupied by *Oriolus Galbula tibicen* A. E. Brehm, *Verz. Samml.*, 1866, p. 4, nom. nud. lodged in the synonymy of *Oriolus oriolus oriolus* (Linnaeus), 1758, by Hartert, in *Vög. pal. Fauna*, vol. i, p. 51, 1903, from which it cannot be extracted and used again. I therefore propose

Oriolus larvatus additus nom. nov.,

for *O. l. tibicen* Lawson, 1962, not *O. G. tibicen* A. E. Brehm 1866 (Hartert, 1903).

Some undescribed subspecies of tanagers from South America

by Kenneth C. Parkes

Received 28th October, 1968

Dr. Robert W. Storer has been good enough to make available to me a copy of the preliminary draft of his manuscript covering the tanager subfamily Thraupinae for the Peters' Check-list. In rearranging the tanager specimens in Carnegie Museum to conform with Dr. Storer's classification, I found that in a number of instances the variation shown by our birds did not accord with that described in the current literature. In fairness to Dr. Storer, it should be pointed out that he attempted little or no revisionary work at infraspecific levels, relying heavily on the standard works of Zimmer, Hellmayr, Phelps, Meyer de Schauensee, and others. The publication deadline for the Peters' list has not permitted the amount of study obviously needed within this subfamily; in particular, many of Zimmer's conclusions, accepted by later authors, were based on inadequate material and must be re-evaluated. In a few instances, however, the specimens available to me, consisting of the holdings of Carnegie Museum and the American Museum of Natural History, sufficed to define hitherto unnamed subspecies. Three are described in the present paper. I am indebted to Dr. Dean Amadon for permission to utilize the facilities of the American Museum.

Euphonia xanthogaster cyanonota subsp. nov.

Type: Carnegie Museum no. 92549, adult ♂, collected at Arimã, Rio Purús, Brazil, 31st August, 1922, by S. M. Klages (collector's no. 30546).

Characters: Nearest *E. x. dilutior* (Zimmer) of north-eastern Amazonian Peru, but dorsum of male steel blue rather than strongly violaceous (this is *not* a function of relative wear). In *cyanonota* only the nape is violaceous, whereas in *dilutior* this colour extends all the way to the upper tail-coverts. The yellow of the cap and underparts is like that of *dilutior*, but the cap may be somewhat less extended posteriorly (this may be affected by preparation technique). There is no difference in size between the two subspecies (for measurements of *dilutior*, see Zimmer, 1943a). The female of *cyanonota* is unknown.

Range: Known from two western tributaries of the Amazon, the Rio Purús (Arimã) and the Rio Juruá (João Pessôa, Lago Grande), in Brazil.

Remarks: Hellmayr (1936) had almost no material of this species from western Amazonian Brazil, tentatively (and wrongly) identifying birds from this region as nominate *xanthogaster* (type locality "Brazil" = vicinity of Rio de Janeiro; see Gyldenstolpe, 1945: 302). Zimmer (1943a) had only a single female from the Rio Madeira, and did not discuss the populations of western Amazonian Brazil. Gyldenstolpe (1951: 296), unaware of the material in Carnegie Museum, listed "*Tanagra xanthogaster dilutior* Zimmer" among the tanagers not yet recorded from the Rio Purús, but to be expected there. His prediction that the Purús population would be referable to *dilutior* was based on his earlier (1945) identification of four adult males from the upper Rio Juruá, a parallel tributary, as belonging to that race. He had not, however, seen any specimens of true *dilutior*, and based his identification on Zimmer's description. I had come to the same tentative conclusion with respect to the identification of the Rio Purús birds, until I was able to compare them directly with Zimmer's series of *dilutior* in the American Museum of Natural History. Gyldenstolpe compared his specimens only with *xanthogaster* from Rio de Janeiro, but the wording of his description makes it highly probable that his specimens are, in fact, referable to *cyanonota*, as might be expected on geographic grounds.

The geographic variation in this species in the north-eastern part of its range is poorly understood. Gyldenstolpe (1945: 303) examined four adult males from the Potaro Highlands of British Guiana (now Guyana), and stated that previous authors were incorrect in assigning birds from this country to *E. x. brevirostris*. His comparative material of the latter was from eastern Ecuador. He had no material of *E. x. exsul*, the subspecies of the coastal ranges of Venezuela, but thought from written descriptions that his Potaro birds resembled *exsul*. However, he described the crown-patch of his specimens as between Mars Yellow and Raw Sienna of Ridgway (1912). In *exsul*, of which Carnegie Museum has an excellent series, the crown is much darker, being nearest Sanford's Brown of Ridgway. Zimmer (1943a: 5) pointed out that the type of *brevirostris* was a "Bogotá" trade skin, and that no Colombian specimens with authentic data have been found to match the dark colours of such "Bogotá" birds (the colour changes he postulated as a possible explanation are, in my opinion, highly improbable). I suspect that the name *brevirostris* will ultimately have to be confined to the eastern portion of the range as presently defined in the literature, from (probably) the eastern slope of the Eastern Andes of Colombia through southern Venezuela to Guyana. Another name will have to be found for the birds of the rest of Andean Colombia, Ecuador, and Peru, currently called *brevirostris* (thus including Gyldenstolpe's material). Bogotá itself is on the western slope of the Eastern Andes, but the yellow-capped birds from this slope in Carnegie Museum bear no resemblance to the description of *brevirostris* in Hellmayr (1936: 24) nor to "Bogotá" skins in New York. It is well known that such trade skins may have been obtained far from Bogotá, often on the opposite slope of the Andes.

Also puzzling are two males from Santarém, Brazil, in the Carnegie Museum collection, the only specimens I have seen from the lower Amazon. They are unlike any described subspecies in having both pure yellow underparts (very slightly deeper than in *dilutior* and *cyanonota*, but not washed with ochraceous) and a yellow-brown crown-patch. The feathers of the latter are actually brown at the tip, yellow in the middle, and dusky at the very base, with the overall visual effect being that of yellow-brown. Birds from this area would be expected to be referable to *xanthogaster* according to the range given by Hellmayr, but true *xanthogaster* is a much more richly coloured bird. More material is obviously needed before the geographic variation in this species can be understood.

Specimens examined: Direct comparisons were made between four specimens from Arimã, Rio Purús, the two Santarém specimens mentioned above, and the entire American Museum series listed by Zimmer (1943a: 8).

Euphonia chlorotica amazonica subsp. nov.

Type: Carnegie Museum no. 92885, adult ♀, collected at Arimã, Rio Purús, Brazil, 13th September, 1922, by S. M. Klages (collector's no. 30883).

Characters: Males like *E. c. taczanowskii* of Peru in colour, but wing shorter and bill shorter, narrower, and more slender; females are also smaller than *taczanowskii*, but are more greenish yellow on flanks, forehead, and lores, with the yellow of the forehead much less sharply defined from the duller colour of the crown.

Measurements: Wing (flattened) ♂ *amazonica:* 52, 53, 53, 53.5, 54, 54, 54, 54, 55, 55.5. ♂ *taczanowskii* (Peru): 55 (worn), 55.5, 56.5, 56.5, 57, 58, 58, 58.5, 59, 59. ♀ *amazonica:* 50.5, 53, 53. ♀ *taczanowskii:* 53.5, 54, 56 mm.

The bills of these euphonias are so small that conventional measurements do not reflect adequately the differences in size and proportions that are immediately apparent to the eye.

Range: Amazonian Brazil (see below for localities).

Remarks: This population was included under *E. c. serrirostris* (part) and *E. c. chlorotica* (part) by Hellmayr (1936), who also commented that he knew of no definite record from the Rio Purús. Gyldenstolpe (1951) also failed to record this species from the Purús, merely listing it (like *E. xanthogaster*) among those likely to occur there. Seven specimens from Arimã in Carnegie Museum establish the presence of *E. chlorotica* in the Purús area. Zimmer (1943a) commented extensively on variability in this species, and finally extended the range of *taczanowskii* to include the birds of Amazonian Brazil. It is true that adult males of *amazonica* are not separable from *taczanowskii* on the basis of colour. The discrimination of *amazonica* helps to clear up some of the confusion in Zimmer's account; a large series from western Mato Grosso (Chapada, Descalvados, etc.) in the American Museum, tentatively assigned by Zimmer to *taczanowskii*, is actually intermediate between *amazonica* and *serrirostris*, as might be expected on geographic grounds.

Specimens examined: Localities from which *amazonica* specimens were seen are as follows (all in Brazil): Arimã, Rio Purús; Boca Lago, Teffé; Caxiricatuba, Rio Tapajoz; Santarém. Localities of specimens of other races in the American Museum collection are listed by Zimmer (1943a: 15).

Tangara ruficervix inca subsp. nov.

Type: American Museum of Natural History no. 169467, adult ♂, collected at Utcuyacu, Dept. Junin, Peru (alt. 4,800 feet), 12th December, 1919, by H. Watkins.

Remarks: The southern Peruvian population of *Tangara ruficervix* has been assigned by all authors to *T. r. fulvicervix* (Sclater and Salvin), described from Tilotilo, Yungas, Bolivia. Hellmayr (1936: 133) called attention to differences between a male from the Yungas of La Paz, Bolivia, and a series from Peru. He mentioned the "more intensely blue" colour and wider orange-rufous band on the "pileum" (actually occiput) of the Bolivian bird. Bond (1955) found the occipital band better developed in one Bolivian male than in one from Eneñas, Dept. Junin, Peru. Zimmer (1943b: 1), with a fine series of 21 Peruvian males before him, but no Bolivian birds, suggested that the width of the occipital band was too variable to be useful taxonomically, and I agree. However, a male from Cochabamba, Bolivia, in the Carnegie Museum collection, shows that Hellmayr was correct in stating that Bolivian and Peruvian birds differ in body colour. The Bolivian bird, true *fulvicervix*, is of a strikingly deeper, more purplish blue, and has the reddish buff of the lower flanks and under tail-coverts darker and richer than in Peruvian examples. The bill of the Bolivian male is shorter and narrower than that of any Peruvian specimen seen, but (as in the case of *Euphonia chlorotica* above), the difference is more striking to the eye than is suggested by the 1 or 2 mm. difference in measurements. The illustration of the female holotype accompanying the description of *fulvicervix* (Sclater and Salvin, 1876) does not appear very different from females of *inca*, but the colours of the plate are probably not accurate, since the written description by Sclater (1886: 130) stresses the purplish tinge of the blue, which is not shown in the plate, and which is one of the chief characters separating true *fulvicervix* from *inca*. The "description" of *T. r. inca* is one of those inverted situations in which the better-known subspecies, common in collections, is the one that requires a name. True *fulvicervix* of Bolivia is known from very few specimens.

Range: Southern Peru; see Zimmer (1943b) for a list of the localities from which "*fulvicervix*" (=*inca*) has been recorded.

References:
Bond, J. 1955. Notes on Peruvian Coerebidae and Thraupidae. *Proc. Acad. Nat. Sci. Philadelphia*, 107: 35–55.
Gyldenstolpe, N. 1945. The bird fauna of Rio Jurua in western Brazil. *Kungl. Sv. Vet. Akad. Handl.*, 22, no. 3: 1–338.
— 1951. The ornithology of the Rio Purus region in western Brazil. *Ark. Zool.*, ser. 2, vol. 2, no. 1: 1–320.
Hellmayr, C. E. 1936. Catalogue of Birds of the Americas. *Field Mus. Nat. Hist. Zool. Ser.*, 13, part 8.
Ridgway, R. 1912. *Color Standards and Color Nomenclature.* Washington, D.C.: privately published.
Sclater, P. L. 1886. Fringilliformes: Part II. *Cat. Bds. Brit. Mus.*, vol. 11.
Sclater, P. L. and Salvin, O. 1876. On new species of Bolivian birds. *Proc. Zool. Soc. London*, 1876: 352–358.
Zimmer, J. T. 1943a. Studies of Peruvian birds. No. XLV. The genera *Tersina*, *Chlorophonia*, *Tanagra*, *Tanagrella*, *Chlorochrysa*, and *Pipraeidea*. *Am. Mus. Novit.* no. 1225, 24 pp.
— 1943b. *Idem*, No. XLVII. The genus *Tangara*. Part 2. *Am. Mus. Novit.* no. 1246: 14 pp.

A non-melanic variant Bullfinch

by C. J. O. Harrison

Received 26th July, 1968

The British Museum (Natural History) recently received, in a collection of mounted specimens of abnormally coloured birds assembled by the late A. H. Scott and presented by Mrs. Scott, a variant example of the Bullfinch, *Pyrrhula pyrrhula*, showing non-melanic schizochroism (Harrison 1963). In such a variant, melanin pigments are absent from the plumage but carotenoid and allied pigments remain. In this example, a male, the plumage is mostly white with three or four scattered grey feathers on the mantle and left wing-coverts, but the pink colour is still present on the breast and head. In addition to extending over the breast, throat, and ear-coverts, the pink colour also continues over the crown of the head on the area normally occupied by the black cap. The forehead appears to be white (the specimen is a little faded having been exhibited for a period in daylight). The small red mark on the inner tertial is present and there is a faint pink tinge to the lower mantle and wings. From the evidence of similar variants one may assume that the red pigment is present in these areas in the normal plumage also, but masked by the melanins, the small amounts on parts such as the wings being probably responsible for the slight purplish tint of the normal feathers. Related species in Asia lack the complete black cap and show a greater amount of visible areas of red or orange pigment on the head and it seems likely that species-specific plumage patterns have been evolved in this group by superimposition of eumelanin patterns on areas of plumage previously showing carotenoid colouring, a similar situation being apparent in the African weavers (Harrison 1965).

Horváth (1961) has discussed some plumage abnormalities of the Bullfinch. He found a small number of reddish feathers present on the black crown in many of his variant individuals. He regarded the presence of such feathers as a reversionary character of genetic origin indicating the phylogeny of the species. If, however, the red pigment is present at all times, then the presence of red feathers on the crown may be of no more significance than the presence of odd white feathers which occur at times in individuals of many species. They are more likely to indicate a temporary or permanent failure of a particular feather follicle to produce adequate melanin than to suggest a reversionary aberration arising from a recessive gene and producing phenotypic plumage characters of another related species.

References:

Harrison, C. J. O. 1963. Non-melanic, carotenistic, and allied variant plumages in birds. *Bull. Brit. Orn. Cl.* 83: 90–96.

— 1965. Concealed yellow pigment in the breeding plumage of some weavers. *Bull. Brit. Orn. Cl.* 85: 44–47.

Horvath, L. 1961. The evolutionary significance of reversionary aberrations in the Bullfinch, *Pyrrhula pyrrhula*, Linnaeus. *Bull. Brit. Orn. Cl.* 81: 66–70.

Weights of the Pennant-winged Nightjar

by P. L. Britton

Received 27th May, 1968

Between March 1966 and December 1967, the writer and his wife obtained a total of 184 weights of Pennant-winged Nightjar *Macrodipteryx vexillarius* in the Balovale District of north-western Zambia. A further six weights obtained by Dr. Robert B. Payne near Solwezi, also in north-western Zambia, in September 1966 are included. In Zambia, nightjars (largely adult male *Macrodipteryx*) are frequently abundant on gravel roads through *Brachystegia* woodland during the period September-March, and all the weights discussed here were obtained from such birds; either dazzled and caught for ringing or recently killed by a vehicle. Since birds were only abundant on roads on light nights with more than three-quarter moon, and at dawn and dusk, a dazzling technique was not very efficient and I have relied heavily on weights from those dead birds that were little damaged. Many of these birds were dissected so that stomach contents could be weighed and gonad activity and visible fat deposits noted. All weights were taken with spring balances; body weights to the nearest 0.5 gm. and weights of stomach contents to the nearest 0.1 gm. Wing lengths were noted in many cases, though these data are largely ignored in this paper (for Zambian measurements of this species see Tree 1967).

Largely as a result of severe petrol rationing, the quantity of data collected is far less than originally hoped, with samples in some cases very small. However, as it is unlikely that any further reasonable number of *Macrodipteryx* weights will be obtained in the near future, the results are worthy of presentation. Most weights are summarized in the Table.

Seasonal weight variation. 175 weights for August-December averaged 68.4 ± 5.0 gm. compared with 15 March weights which averaged 76.1 ± 9.0 gm. A comparison of the means for these two periods indicates that the difference between them is statistically significant. A t-test was used ($P < 0.01$). This species is wholly migratory in Zambia, being present only from mid-August to mid-March, and the March birds weighed (on 5th and 6th March) were in fact the last birds seen that season. They would, therefore, be expected to be heavy prior to a lengthy migration, for, in addition to the evidence for palaearctic species (for example Smith 1966). Fry (1967) has shown that the intratropical African migrant *Merops albicollis* lays down a substantial store of fat prior to migration. Unfortunately, no March birds were inspected for fat deposits.

Of all birds weighed, the only ones weighing over 82.5 gm. were six in March, five of these being on 6th March. Further, the difference in the mean weights for 5th March (71.7 gm.) and 6th March (81.3 gm.) indicates an increase of 15% in the average weight of the population from the first date to the second, though samples are small. A *t*-test was used ($P<0.02$), and if the same test is used on only the six definite females of 5th March and the four definite females (including one recapture) of 6th March, the difference is equally significant. A female weighing 69.0 gm. at 2300 hrs. on 5th March had increased in weight by 3.0 gm. by 2130 hrs. the next day. This bird probably gives a more realistic estimate of the actual increase in weight between the first date and the second, as a 15% increase in weight is unlikely during such a short interval.

Sexual weight differences. Fourteen adult females weighed in September ranged from 67.0 to 82.5 gm., average 77.1 ± 5.8 gm. compared with 104 adult males weighed in September which ranged from 59.0 to 79.0 gm., average 67.7 ± 4.4 gm. The considerable difference between these mean values is statistically very significant. A *t*-test was used ($P<0.001$). Adult females are, therefore, quite obviously heavier than adult males in September, presumably because of the well known weight increase in female birds prior to egg-laying (Nice 1938). The majority of eggs would be laid in October (Benson, Brooke & Vernon 1964) and, of two females dissected in September, one had the ovary and oviduct considerably enlarged. I was unable to obtain any definite adult female weights for any other period, though the weights of six females (at least four of them definitely non-adult) obtained in November-December ranged from 57.0 to 75.0 gm., average 67.5 ± 5.8 gm., indicating that female weights are more similar to male weights at other times. Young birds are, however, often lighter than adults caught at the same time (see, for example, Baldwin & Kendeigh 1938), though this is not necessarily the case with this species.

Males are far larger than females if size is judged by wing length. 86 adult male wing lengths (excluding nuptial pennants) ranged from 198 to 242 mm., average 222.0 ± 8.4 mm., compared with 13 adult female wing lengths which ranged from 188 to 205 mm., average 194.4 ± 6.1 mm. There is no significant positive correlation between body weight and wing length for either males (86 birds) or females (13 birds).

Quantitative analysis of stomach contents. The contents of 44 stomachs were weighed in the period September-December, 1967. Most of the birds concerned were killed between 1900 and 2200 hrs., yet the weights of their stomach contents ranged from 0.1 to 15.0 gm., average 4.54 ± 3.90 gm.; individual food items normally weigh between 0.5 and 3.0 gm. It is quite obvious from the extremely large range and standard deviation in the weight of stomach contents that the amount of food in the stomach is very variable and such extreme variation is apparent in the weights of a series of stomach contents taken in any one hour. Moreover, some birds killed within 20 minutes of darkness had fairly full stomachs whereas one killed at 0500 hrs. had an almost empty stomach.

The contents of nine adult male stomachs were weighed in September and the contents of eleven male adult stomachs were weighed in October. September stomach weights averaged 5.9±4.7 gm. whereas October stomach weights averaged 2.0±1.79 gm. The difference between these two means is statistically significant. A t-test was used ($P<0.05$). The mean body weight of adult males in October is a little less than the mean for September but this difference is not significant, even at the 0.1 level (using a t-test).

I was motivated to a study of stomach contents amounts by the suggestion (pers. comm.) of Dr. Robert B. Payne that the considerable weight variation in a small sample of adult males of this species which he obtained near Solwezi in September 1966 might be, to some extent, the result of the very variable amounts in the birds' stomachs. I know of no quantitative estimates made (for example a study of the weights of stomach contents) in an effort to establish a correlation between body weight and the amount of food in the stomach.

As September stomachs were heavier than October stomachs in adult males, as discussed above, any correlation is obscured if all twenty weights are considered together. However, when these weights are grouped more homogeneously, separating September and October birds, the positive correlation between body weight and weight of stomach contents is significant in both groups ($P<0.05$).

Visible fat deposits. Between 50 and 60% of September-December birds had visible fat deposits on dissection. Amounts were small, but exceeded 0.4 gm. weight in 12% of birds, maximum 0.8 gm. No March birds were examined for visible fat deposits.

TABLE

Weights in gm. of the Pennant-winged Nightjar *Macrodipteryx vexillarius* in north-western Zambia in the period March 1966—December 1967. Adult male weights (a) are given on dates when at least five were weighed. Other weights are grouped as homogeneously as possible.

Date	*Total Weighed*	*Average Weight (gm.)*	*Weight Range (gm.)*	*S.D.*
		(*a*) Adult Males		
1966				
September 27th	18	67.9	62.0–75.0	4.6
28th	6	67.8	60.5–75.0	5.6
1967				
September 12th	8	68.4	63.0–78.5	4.2
13th	8	65.6	59.0–74.5	5.8
15th	14	67.6	63.5–73.0	3.4
16th	17	67.8	61.0–79.0	4.1
17th	11	67.6	59.5–73.5	4.5
20th	5	68.0	65.5–71.0	3.2
October 11th	10	65.2	60.5–72.0	3.2
		(*b*) Adult Females		
September 1967	14	77.1	67.0–82.5	5.8
		(*c*) Females		
1966				
March 5th	6	70.2	65.0–78.0	5.8
6th	4	81.5	72.0–88.0	5.9
		(*d*) Young Birds, Largely Unsexed		
Nov./Dec. 1967	27	68.3	57.0–79.5	4.3
		(*e*) Others		
1966				
March 5th	3	74.7	61.0–86.0	—
6th	3	81.0	69.0–88.0	—
1967				
Nov./Dec.	17	71.7	62.0–82.0	5.5

SUMMARY

A total of 190 Pennant-winged Nightjar *Macrodipteryx vexillarius* weights were obtained in north-western Zambia between March 1966 and December 1967. Birds weighed in March were heavier than birds weighed at other times, presumably as a result of increased fat deposits prior to migration.

Females were heavier than males in September (the period prior to egg-laying), though a sexual difference in weight is probably slight at other times; male wings are very much longer than female wings.

The contents of 44 stomachs were weighed in the period September-December 1967. The amount of food in the stomach is extremely variable (0.1–15.0 gm.). Adult males obtained in October had less food in their stomachs than those in September, though the reason for this is not known. There is positive correlation between body weight and weight of stomach contents if September and October birds are considered separately.

Birds dissected in September-December had little visible fat deposit; no March birds were dissected.

ACKNOWLEDGMENTS

I am most grateful to my wife for her constant assistance on my frequent "nightjaring" trips. Thanks are also due to Dr. Robert B. Payne for his assistance on one night at Balovale and for the loan of his data obtained near Solwezi, and to C. W. Benson for reading and commenting on the original draft of this paper.

References:

Baldwin, S. P. and Kendeigh, S. C. 1938. Variations in the weight of birds. *Auk* 55: 416–467.

Benson, C. W., Brooke, R. K. and Vernon, C. J. 1964. Bird breeding data for the Rhodesias and Nyasaland. *Occasional papers of the National Museums of Southern Rhodesia* 27B: 30–105.

Fry, C. H. 1967. Lipid levels in an intratropical migrant. *Ibis* 109: 118–120.

Nice, M. M. 1938. The biological significance of bird weights. *Bird-banding* 9: 1–11.

Smith, V. W. 1966. Autumn and spring weights of some Palaearctic migrants in central Nigeria. *Ibis* 108: 492–512.

Tree, A. J. 1967. Notes on the Caprimulgidae of the Kafue Basin. *Ostrich* 38: 189–193.

The white-eye *Zosterops maderaspatana* (Linn.) of Menai Island, Cosmoledo Atoll

by C. W. Benson

Received 5th October, 1968

Since the comprehensive review of variation in the western Zosteropidae by Moreau (1957), there has been further collecting on some islands in the western Indian Ocean, leading to a fuller understanding of variation in this family in these particular areas: see Benson (1960: 88–91), who studied the Comoro forms, and Storer & Gill (1966), *Z. borbonica* (Gmelin) in Réunion and Mauritius.

I spent most of January to March 1968 on the Aldabra Atoll, during Phase III of the Royal Society Aldabra Expedition. I was also able to make brief visits to certain neighbouring islands—Astove on 5th March and the Cosmoledo complex the following day. For descriptions of these and other islands north of Malagasy (formerly Madagascar) see Watson *et al.* (1963) and Stoddart (1967). Astove is a single island, but Cosmoledo consists of a series of islands, of which the largest is Menai, about 1¾ miles long by ½ mile wide. Moreau (1957: 416, 428) had only one specimen of *Z. maderaspatana* available from Cosmoledo, and none from Astove. I visited both Menai and Wizard Islands in the Cosmoledo Atoll, but saw no white-eye on either, though have been lent two specimens in the Peabody Museum of Natural History, University of Yale, collected by Dr. W. D. Hartman on Menai in December 1957. I did find white-eyes on Astove, and two specimens were collected; in addition I have been lent two collected by I. Parker there in October 1967. Other recent material consists of 12 specimens from Aldabra; the material in the British Museum (Natural History) which was available to Moreau has also been used.

I agree with Moreau (*op. cit.*: 397) that only one subspecies can be maintained for Malagasy, namely nominate *maderaspatana*. Birds which are most markedly yellowish above occur in drier areas in the south-west and in the extreme north, with purer green ones in intervening more humid areas, especially in the east. As Moreau states, too (*op. cit.:* 416, note 35), Gloriosa birds cannot be separated from the yellowest of Malagasy ones. On the other hand, Astove birds lack the yellowish tone above of those from Gloriosa, and not one of the former has any of the yellow wash on the grey belly noted by Moreau in most of the latter. The Astove birds can, however, be matched with specimens from the more humid parts of Malagasy. But for the situation in Malagasy described by Moreau, one might well be disposed to recognise the Gloriosa and Astove populations as subspecifically distinct from each other. Presumably Gloriosa has an appreciably drier climate than has Astove. Aldabra birds also incline to yellowish above, in comparison with those from Astove, but not so markedly as the Gloriosa birds. Probably Aldabra has less rain than has Astove, and see Benson & Penny (1968: 106), who draw attention to a reduction of melanin in several species of land bird on Aldabra, in an apparently fairly dry climate. Incidentally, an Aldabra specimen of *Z. maderaspatana* collected by W. L. Abbott in 1892, in the University Museum of Zoology, Cambridge, can be matched with some collected there in 1968, so that the possibility of *post mortem* changes in colour in the course of the years does not seem to arise.

There remains for description and discussion the position of three specimens from Menai Island, Cosmoledo. These are sufficiently distinct to require designation by name:

Zosterops maderaspatana menaiensis, subsp. nov.

Type: Male, skull fully ossified, 15th April 1952, Menai Island, Cosmoledo Atoll, collected by D. Vesey FitzGerald; in the British Museum (Natural History), registered number 1952. 60. 28.

Description: Nearest to *Z. m. maderaspatana* of Astove and the more humid areas of Malagasy, mainly in the east, but paler green above; yellow of throat and under tail-coverts decidedly paler than in any population of *Z. m. maderaspatana*, or in *Z. m. aldabrensis* Ridgway.

Colour of soft parts of type: Bill black, basal half of lower mandible blue-grey; feet blue-grey; irides brown.

Measurements of type: Wing 56, tail 36, culmen (from base of skull) 13 mm.

Remarks: Hartman's two specimens (Peabody Museum numbers 40929 and 40930) from Menai, dated 11th and 12th December, 1957, both unsexed, show the same pallor as described for the type. One is in worn dress, the other in fresh dress and apparently immature. The yellow on the throat of the latter is particularly pale. But above all, these two are of interest in that they are both partially grey and partially green on the upperside, unlike the type (collected some five years earlier), which is wholly green above. The two colours fall into no regular pattern, and some individual feathers even show the two colours. There is no reason to suppose that they have been artificially discoloured, since none of 17 other specimens lent to me from the Peabody Museum, collected by Hartman on the same expedition (Hartman, 1958), show any peculiarity. In Cambridge there are seven specimens of *Z. m. anjouanensis* E. Newton which were skinned after 11 years of soaking in alcohol. These are uniformly, not irregularly, paler green above (no sign of grey) and paler yellow on the throat than in specimens of this subspecies skinned at the time of collecting, and rightly caused A. & E. Newton (1888) to regard *Z. praetermissa* Tristram as the same as *anjouanensis;* see also Moreau (*op. cit.:* 409, note 2). Moreau (*op. cit.*) also draws attention to *Z. hovarum* Tristram, founded on a single specimen, probably from Malagasy, and perhaps no longer in existence. It would seem from Tristram's description that the normal green colour above of *Z. maderaspatana* has been entirely replaced by grey. But the specimen is illustrated in colour in *Ibis*, 1887 (plate XI, fig. 2), and this figure does faintly indicate the asymmetrical presence of some green as well as grey. Delacour (1932: 79), who examined the specimen, states that the figure is a very exact representation. Thus the type of *hovarum* and Hartman's two specimens from Menai Island may resemble each other closely, representing the same kind of individual abnormality. Unfortunately, as already related, no white-eye was seen on Menai during my short visit in March 1968. On Aldabra any grey-backed abnormality could only be extremely rare. White-eyes are plentiful there, but only wholly green-backed birds were ever noticed by M. J. Penny and others as well as myself during the period August 1967 to March 1968.

The following is a summary of measurements in mm. of the material most closely concerned with this study:

Number of specimens	*Wing*	*Tail*	*Culmen from base*
	Gloriosa (*Z. m. maderaspatana*)		
7	55–58 (56.6)	37–39 (38.6)	13–15 (13.9)
	Astove (*Z. m. maderaspatana*)		
4	55–56 (55.3)	35–38 (36.2)	13–13.5 (13.2)
	Cosmoledo: Menai Island (*Z. m. menaiensis*)		
3	54, 56, 56	36, 36, 37.5	13, 13, 13.5
	Aldabra (*Z. m. aldabrensis*)		
15	49–54 (51.7)	36–42 (39.2)	11.5–13.5 (12.5)

The wing-lengths suggest that the Aldabra birds are smaller than those from the other three islands, though proportionately longer in the tail. The ratio 100 × tail/wing for the four islands works out respectively at 68.2, 65.5, 66.0, 75.5. This bears out rather closely the results obtained by Moreau (*op. cit.:* 428), who had only four specimens from Aldabra. The larger size of Astove than Aldabra birds is borne out by weights. The four from Astove weighed 9.8–11.5 (10.6), 12 of those from Aldabra 6.75–9.3 (8.2) gms. An exceptionally large Aldabra specimen—the only one with a wing-length of as much as 54 mm., a female—weighed 10.5 gms. Nine other Aldabra birds, mist-netted by A. W. Diamond or A. W. Hutson, and released after examination, had wing-lengths of 51–52 mm., and weighed 6–9 (7.6) gms. Incidentally, according to Benson (1967: 106) there is no white-eye on Assumption, and none was seen when I was on that island on 15th/16th September, 1967, after an earlier visit to Aldabra.

ACKNOWLEDGMENTS

My visits to Astove and Cosmoledo would not have been possible but for the hiring of the East African Marine Fisheries Organisation's vessel the s.s. *Manihine*, with funds provided from the Frank M. Chapman Memorial Fund, at the instance of Dr. Dean Amadon. I am also most grateful to Professor Charles G. Sibley and Mrs. Eleanor H. Stickney for the loan of Hartman's interesting specimens, and no less so to R. K. Brooke, of Rhodesia, who visited the Peabody Museum in May 1968 and brought them to my notice. R. H. Carcasson and A. D. Forbes-Watson, of the National Museum of Kenya, Nairobi, most generously allowed me the use of the specimens collected by I. Parker on Astove in October 1967, and provided me with a skinner, Loriu Lokiru. Also, the following have been consulted in the course of preparing these notes: Dr. W. R. P. Bourne, Mrs. B. P. Hall, R. E. Moreau, M. J. Penny.

References:

Benson, C. W. 1960. The birds of the Comoro Islands. *Ibis* 103b: 5–106.
— 1967. The birds of Aldabra and their status. *Atoll Research Bull.* 118: 63–111.
Benson, C. W. and Penny, M. J. 1968. A new species of warbler from the Aldabra Atoll. *Bull. Brit. Orn. Cl.* 88: 102–108.
Delacour, J. 1932. Les oiseaux de la Mission Zoologique Franco-Anglo-Américaine a Madagascar. *Oiseau et Rev. Franc. Orn.*: 1–96.
Hartman, W. D. 1958. Report on some land-birds of Farquhar, St. Pierre, Astove, Cosmoledo, Assumption and Aldabra. *Seychelles Gov't. Bull.* 21.
Moreau, R. E. 1957. Variation in the western Zosteropidae (Aves). *Bull. Brit. Mus.* (*Nat. Hist.*) 4 (7).
Newton, A. and E. 1888. Notes on some species of *Zosterops*. *Ibis* 5 (6): 474–476.
Stoddart, D. R. 1967. Summary of the ecology of coral islands north of Madagascar (excluding Aldabra). *Atoll Research Bull.* 118: 53–61.
Storer, R. W. and Gill, F. B. 1966. A revision of the Mascarene white-eye, *Zosterops borbonica* (Aves). *Occ. Papers Mus. Zool. Univ. Michigan*, 648.
Watson, G. E., Zusi, R. L. and Storer, R. E. 1963. *Preliminary field guide to the birds of the Indian Ocean.* Smithsonian Inst., Washington.

Additional information on the carpometacarpal process as a taxonomic character

by C. J. O. Harrison

Received 26th July, 1968

Pocock (1966) examined some osteological characters of African birds and found a consistent pattern in the presence or absence of a process on the outer edge of the carpometacarpus. He considered that this process had some taxonomic significance and that it could be used to show relationships between passerine taxa. He separated the passerines into two groups on the basis of this character, the "lanoid" group in which the process was absent, and the "passeroid" group in which it was present. He examined this character in African species only, but suggested that it could be used to determine the affinities of "problem" genera found elsewhere.

It has been possible to examine osteological material in the British Museum (Natural History) for a number of species, in particular those of Australian families, some of which have problematical affinities, and the results are given below.

The process was found to be absent from the examined specimens in the following genera:

Cracticidae—*Cracticus*, *Strepera*, *Gymnorhina*.

Artamidae—*Artamus*.

Grallinidae—*Grallina*, *Struthidea*, *Corcorax*.

Dicruridae—*Dicrurus*.

Campephagidae—*Campephaga*, *Coracina*, *Pericrocotus*.

It was present in the examined specimens of the following genera:

Hirundinidae—*Hylochelidon*.

Timaliidae—*Pomatostomus*, *Orthonyx*, *Cinclosoma*, *Chamaea*, *Malurus* (see Harrison & Parker 1965).

Dicaeidae—*Pardalotus*.

Sittidae—*Sitta*, *Neositta*.

Paridae—*Parus*.

Aegithalidae—*Aegithalos*.

Prunellidae—*Prunella*.

If the differences were as clear-cut as this it would be a fairly easy character to use for separation, even though there is some doubt about its significance and function, but the pattern of occurrence is not quite so simple. In some birds the process is present in a very reduced form, and it may be more easily detected by touch, a fingernail being run along the bone to detect the slight prominence, than by searching for visible signs of it. It is present but poorly defined in the Climacteridae (*Climacteris*) and the Epthianuridae (*Epthianura*). In the Meliphagidae it is present and distinct in a number of species in the genera *Meliphaga* and *Plectorhyncha;* but in *Myzantha* it is individually variable, being either poorly defined or absent in different individuals of the same species; and it is almost absent in *Anthochaera* and quite absent in *Entomyzon*. It is present in *Promerops* but since it is also present in the Nectariniidae this is not helpful in placing the genus.

In the Muscicapidae (used in the broad sense but omitting the Timaliidae, here regarded as a separate family) the process is present in the Turdinae (*Turdus*), the Sylviinae (*Regulus*), and Acanthizinae (*Aphelocephala*, *Acanthiza*, *Chthonicola*); but in the Pachycephalinae it is present in *Colluricincla* and *Oreoica*, barely present in *Falcunculus*, and absent in two specimens of *Pachycephala rufiventris* that were examined, although *Colluricincla* and *Pachycephala* are scarcely separable (Deignan 1964). In the Muscicapinae its absence is confirmed in three species of fantail-flycatcher of the genus *Rhipidura*, and in monarchine flycatchers of the genera *Myiagra*, *Seisura*, *Monarcha* and *Piezorhynchus*.

In view of this variation it seems inadvisable to place much weight upon presence or absence of the process in single species of doubtful taxonomic affinities. It is absent in *Pityriasis* which might or might not confirm an affinity with the Prionopidae. It is present in *Bombycilla garrulus* and present but poorly defined in *Hypocolius ampelinus*, and were this of vital significance it would separate them from the shrikes and related families with which they are grouped by some taxonomists.

Although when used as a single character the taxonomic value of the presence of this process is uncertain, it does provide additional morphological variation which might be useful in conjunction with other characters.

References:

Deignan, H. G. 1964. Birds of the Arnhem Land Expedition. *Records of the American-Australian Scientific Expedition to Arnhem Land*, 4: 408.

Harrison, C. J. O. and Parker, S. A. 1965. The behavioural affinities of the Blue Wrens of the genus *Malurus*. *Emu* 65: 103–113.

Pocock, T. N. 1966. Contributions to the osteology of African birds. *Ostrich, Supplement* no. 6: 83–94.

The Tree Sparrow *(Passer montanus)* breeding in the Maltese Islands

by J. Sultana

Received 28th September, 1968

The Maltese islands, with an area of 122 square miles and a population of well over 300,000, lack large uninhabited areas, permanent fresh water, woods and other suitable habitats for most breeding birds. Apart from this, bird protection is non-existent, and so one is not surprised to find that the number of the islands' breeding birds is very limited. It was, therefore, with some satisfaction that last year I added *Passer montanus* to the list. J. Gibb (1951) did not meet with this species during his stay in Malta but he included it in the list of species that breed in Sicily and for which there is suitable habitat in the Maltese islands.

The Tree Sparrow has previously been recorded as an irregular and scarce passage migrant. A. Schembri (1843) listed it as rather rare and erroneously stated that it bred. In fact he begged C. A. Wright (1864) "to correct an error he fell into, in saying that this species bred in Malta". G. Despott (1917) mentions that it occurred in fair numbers in the autumn of 1912, and he did not include it in "The Breeding Birds of Malta". E. L. Roberts (1954) did not mention that *Passer montanus* may have bred or is breeding in the Maltese islands and he wrote "Dr. DeLucca records a pair of the nominate race taken at Gnejna in the autumn 1947. He believes that great numbers of Tree Sparrows pass at irregular intervals of years, and that a few may pass every year during autumn." C. & V. DeLucca (1959) mention an example which was taken in October 1958 and they state that it is a very scarce and irregular species. C. De Lucca (1967) gives another record of one taken in December 1966 at Wied id-Dis, vicinity of Gharghur.

On 30th April, 1967, while bird watching at Marsalforn Valley, limits of Xaghra, in Gozo, I heard frequent calls of the Tree Sparrow and after further investigation I saw that some were darting in and out under the arches of a limestone bridge. I noted at least four pairs of *Passer montanus* and six pairs of *Passer hispaniolensis* going in crevices in the arches. I also noted that the spaces used by the Tree Sparrows were narrower and deeper than those of the Spanish Sparrows and this made it impossible to examine a nest. On 19th May, 1967, I visited the place again with Flt.-Lt. D. Elphick, then serving with the R.A.F. in Malta, who identified the Tree Sparrows going in the cracks, one of which being less than a foot away from a Spanish Sparrow's nest. Two days later I again visited the place, this time with J. Attard, Chairman of the Malta Ornithological Society, and we located an accessible nest, 11 feet above ground level, in which were four eggs.

On 27th July, 1967, I examined and ringed a young Tree Sparrow which had just left its nest under the bridge and the next day I located another nest with three young, but these were taken away by a labourer who happened to be working in that area.

Since April 1962 I had other reports of Tree Sparrows breeding at Ghajnsielem, Xaghra and Nadur in Gozo and at Wied Incita in Malta, but these were never confirmed.

This year, 1968, no nests were found in the bridge as the holes were filled up with cement by the Public Works Dept. in autumn 1967. But during June and July I located three others under the arches of a similar bridge a quarter of a mile further up the valley. Though the young could be heard, the nests could not be examined as they were also in narrow cracks in the ceiling about 18 feet above the ground.

Another nest was located in May 1968 by E. Spiteri Campbell, a committee member of the M.O.S.; this contained five young and was the first record for the island of Malta. Situated in a hole in a wall surrounding a garden at Santa Venera, a small suburban town, the nest was eight feet above the ground and was well concealed by an orange tree.

In August 1968, I found another nest with young at the village of Xaghra. It was in a deep narrow hole in the facade of a house, only five feet above the ground and facing a busy road. Some of the local people reported to me other nests at Xaghra which I could not confirm.

It is worthy of mention that a Tree Sparrow which I ringed on 19th August, 1967 at Marsalforn Valley was retrapped on 17th May, 1968 and again on 7th August, 1968. Two others which were ringed both on 17th May, 1968 were retrapped on 7th August, 1968, one of which was trapped again on 20th August, 1968.

Following is a list of other records of *Passer montanus* seen in the Maltese islands from January 1967 until June 1968.

1967	
January	One ringed at Lunzjata.
March	One in the vicinity of Rabat and three at Marsalforn Valley.
July	15+ roosting in a mulberry tree at Marsalforn.
August	Two parties of 20+ each, one at Marsalforn Valley and the other at Ramla (noted on most days).
September	Same as for August.
October	Noted frequently singly or in small parties in various localities in Malta and Gozo. Passages took place from middle of the month till 22nd, during which period flocks of up to 50+ were not infrequently noted over Mtahleb in Malta and Xaghra in Gozo.

November	Few seen coming in over Mtahleb on the 4th. Three were noted at Chadwick Lakes and nine at Ramla.
December	20+ present at Ramla.
1968	
January to March	Maximum of 50 present at Ramla and Marsalforn Valley. A pair was noted during the last week of March at Chadwick Lakes.
April	Ten at Ramla and three at Floriana.
June	Four at San Blass, Nadur.

I wish to thank E. Elphick, J. Attard and E. Spiteri Campbell for their help already mentioned in the text. I am also indebted to C. Gauci for helping me in the observations and to V. Vella Muskat, Secretary of the Malta Bird Observatory, for the retrap records.

References:

DeLucca, C. & V. 1959. Note sull'Ornitologia delle Isole Maltesi. *Rivista Italiana di Ornitologia*, A XXIX, S II.

DeLucca, C. 1967. Appunti sull'Ornitologia delle Isole Maltesi. *Rivista Italiana di Ornitologia*, A XXXVII, S II.

Despott, G. 1916. The Breeding Birds of Malta. *The Zoologist*, No. 899, 15th May.

— 1917. Notes on the Ornithology of Malta. *Ibis* 59. July 1917. 281–349.

Gibb, J. 1951. The Birds of the Maltese Islands. *Ibis* 93 (1951): 109–127.

Roberts, E. L. 1954. *The Birds of Malta*. Progress Press.

Schembri, A. 1843. *Catalogo Ornitologico del Gruppo di Malta*. Tipografia Anglo-Maltese.

Wright, C. A. 1864. List of Birds Observed in the Islands of Malta and Gozo. *Ibis* (1) 6: 42–73, 137–157.

A goose hybrid with the head pattern of the Giant Canada Goose

by James M. Harrison and Jeffery G. Harrison

Received 17th September, 1968

The Anatidae are becoming recognised as a most fruitful source of hybrids, in which the progeny reveal characters which may be foreign to either parent, and these may bear a strong resemblance to some other species within this group. We believe that this arises as a recombination of recessive genes during hybridization, but it can also arise as a variant in certain individuals without there being apparently any question of hybridization. We also believe that these characters when revealed provide evidence of phylogenetic relationship.

This view has been supported by Dr. B. M. Slizynski, who investigated the chromosomes of a Northern Shoveler × European Wigeon (Slizynski 1964) and who subsequently wrote to J.M.H. as follows with regard to variants: "They must result from genes carried latently within a species group, which from some factor or mechanism at present obscure has become phenotypically visible and appears sporadically in individuals in some closely related species in which they are normally latent or suppressed."

Most hybrid examples demonstrating this phenomenon have occurred in the ducks Anatinae, but it also occurs in goose hybrids. The present example is of a hybrid within the genus *Branta*, in this case between a male Cackling Canada Goose *Branta canadensis minima* and a female Barnacle Goose *B. leucopsis*, bred in 1967 by W. Perowne.

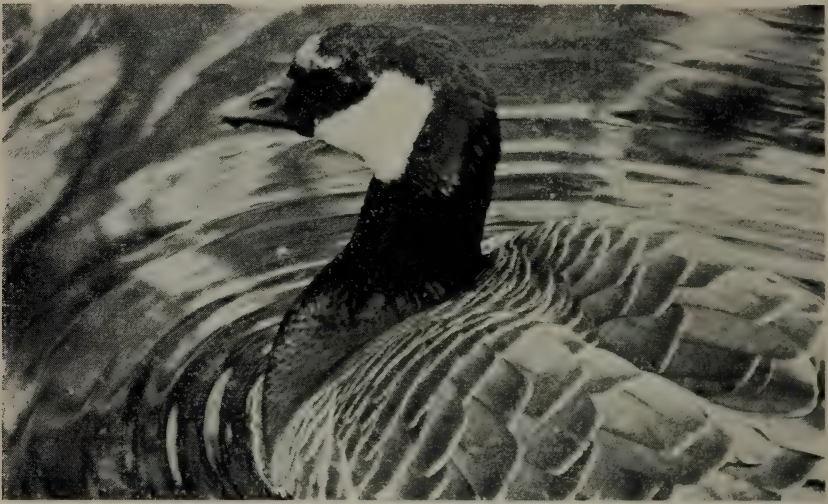


Photo: Pamela Harrison

Branta canadensis minima x *Branta leucopsis*

The photograph of one of the hybrid progeny shows that the bird is basically a typical intermediate hybrid, the black neck of the Canada Goose with the typical white "cut-throat" mark extending on to the upper neck, as in the Barnacle Goose. The mantle feathers are more contrasted than in the Canada Goose, with greyish centres indicative of Barnacle influence.

The character of much interest is the white forehead bar which is also most probably of Barnacle influence. However, Hanson (1965) has shown that a prominent white forehead patch is found in many individuals of most populations of the Giant Canada Goose *Branta canadensis maxima*. It is a very rare variant in other races of the Canada Goose and was not present in the parent bird involved in the cross.

We are grateful to F. W. Perowne for presenting us with this interesting hybrid and to Dr. Pamela Harrison for the photograph.

References:

Hanson, H. C. 1965. *The Giant Canada Goose*. Illinois Univ. Press.

Slizynski, B. M. 1964. Cytological observations on a hybrid duck *Anas clypeata* x *Anas penelope*. *Genet. Res. Camb.*, 5: 441–447.

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Mr. John Yealland, The Zoological Society of London, Regent's Park, London, N.W.1. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for ''Description'', ''Distribution'', ''Type'', ''Measurements of Type'', ''Material examined'' and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers which cost 5*s*. each, should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Members who have back numbers of the *Bulletin*, which they no longer require are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 5*s*., payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, Mr. Martin W. Woodcock, 73 Hildenborough Crescent, Maidstone, Kent.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, 104 London Road, Sevenoaks, Kent.

Bulletin of the

British Ornithologists' Club

Edited by

JOHN J. YEALLAND

Volume 89 No. 2 April 1969

R

Committee

Dr. J. F. Monk (*Chairman*)
Sir Hugh Elliott, BT. (*Vice-Chairman*)
Mrs. J. D. Bradley
D. R. Calder
Prof. J. H. Elgood
P. Tate (*Treasurer*)
P. L. Wayre
M. W. Woodcock (*Secretary*)
J. J. Yealland (*Editor*)

Dates of meetings to be held during 1969

15th April, 20th May, 15th July, 16th September, 18th November.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 89 No. 2 Published: 1st April, 1969

The six hundred and fifty-seventh meeting of the Club was held at the Rembrandt Hotel, London on the 18th February, 1969.

Chairman: Dr. J. F. Monk

Members present: 13; Guests 4.

Dr. C. H. Fry gave an illustrated talk on the bee-eaters and made some comments on the jacamars.

The six hundred and fifty-eighth meeting was held at the Rembrandt Hotel on the 18th March, 1969.

Chairman: Sir Landsborough Thomson

Members present: 12; Guests 4.

"Some observations on the present state of palaeornithology" was the title of a talk given by Mr. James Fisher.

Bird migration in Rumania

by Dan Munteanu

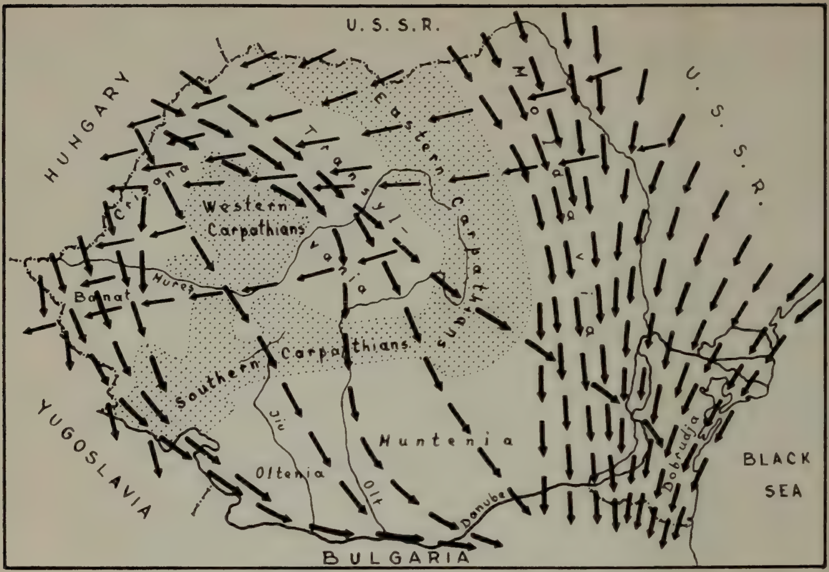
Received 24th June, 1968

The numerous attempts that European ornithologists have made to mark on maps precisely delimited migration routes have proved to be untrue to reality. That is why Boubier's "migration fans", often attacked on account of too broad a generality, still prove valid to-day, while the routes that many ornithologists (beginning with Palmen and Menzbier in the last century) described have not been properly corroborated so far. The fact is also significant that J. Dorst, in the second French edition (1962) of his excellent book *Bird Migrations*, omitted the reproduction of the map of Euroasian routes of migration which had been published in the first edition (1956).

The tendency of confining the broad migration streams to narrow routes has also been manifest in Rumania. In the Danube Delta alone some ornithologists believed there were six distinct routes: the East Elbic route, the Pontic route, the Carpathian route, the Sarmatian route, the Black Sea route as well as a route for Woodcocks. Referring to the country as a whole, L. Rudescu (1958) adds five other routes, of which one at least (the northern branch of the East Elbic route) has no real confirmation.

Therefore I have decided to attempt a simpler sketch of the migration directions through Rumania, working on the basis of Rumanian literature, data on ringed birds recaptured, personal observations and what is generally known of this problem abroad. In the sketch that follows my conclusions are shown superimposed on a sketch of the Carpathians mountain range, which, along with the Alps, has a remarkable influence on the European migration routes.

When analysing the autumn migration, one is immediately impressed by



The main autumn migration directions through Rumania.

the great affluence of birds in the east of the country (Moldavia, eastern Muntenia and Dobrudja). Migratory birds breeding between the Scandinavian peninsula to the west and the Caspian Sea to the east pass through this part of the country as through a funnel; so do migratory birds from northern and western Siberia. The Black Sea route, originating in the north of Aral Lake and of the Caspian Sea, has a well marked individuality but, before reaching Dobrudja, some of its secondary branches cross the Black Sea to Turkey.

The birds passing through the south-east of Rumania (approximately following the north-south direction) will either fly on through Asia Minor and Asia Anterior, or cross the Mediterranean in the Cyprus area.

The Eastern Carpathians are not an insurmountable barrier and birds from Central and South Russia, as well as Siberia, cross them and then stop for the winter in Yugoslavia, Italy, southern France or north-western Africa. Numerous birds from Transylvania, Crişana and Banat, which also go south-west, join them.

Migrants from the north-west (including White Storks and other Ciconiiformes, Bee-eater, Red-backed Shrike, Red-breasted Flycatcher, Blackcap, Golden Oriole, etc.) follow a direction that corresponds roughly to the route which originates in the Elba region, crosses the Panonnian plain and reaches the Balkan peninsula. These birds enter Rumania from the west, flying north-west to south-east, pass through the Banat region and then, some of them at least, go east, following the Danube valley to the east of Bulgaria. Others fly directly south through Serbia and Macedonia. Of the White Storks entering the Crişana region, some cross northern Transylvania and, looping around the Western Carpathians, fly on towards the south, crossing the Southern Carpathians at several points, mostly along the large valleys (the Olt valley, the Jiu valley, etc.). It then follows that a double crossing of migration routes takes place in the western half of Rumania. Finally, the birds which have crossed Rumania from the north-west meet those coming from the east of the country in Bulgaria or farther south.

But there are some birds which migrate over almost the whole country in a north-south direction (it is not marked on the map). At least one species may be included in this category, the Woodcock, and maybe the Willow Warbler and the Siskin. The Crane follows the same direction not only in the east of Rumania, but also over the western plains of Crişana and Banat (more precisely NNE–SSW).

The situation is approximately reversed during the spring migration, but in certain species there are little route differences. The Woodcock, for instance, does not pass through the Danube Delta; White-fronted Geese cross the western country in incomparably smaller numbers than in autumn.

The views mentioned above refer to the general aspect of the migration and do not deny the existence of peculiar situations.

Abnormal plumage variations in the Red-headed Weaver

by Bryan L. Sage

Received 19th December, 1968

A previous paper (Sage, 1965) described some plumage variations involving the loss of melanin pigments in the genus *Euplectes* (Ploceidae). The present paper deals with another of this family, the Red-headed Weaver *Anaplectes* (*Malimbus*) *melanotis* (Lafresnaye) which occurs in Africa in two races. In breeding males of the more northern race *A. m. melanotis* the area of the eyes, ear-coverts, nostrils, lores and chin are black, and the outer edges of the flight feathers are scarlet. In the southern race *A. m. rubriceps* (Sundevall) in similar plumage there is little or no black in the facial area and the edges of the flight feathers are yellow, or occasionally pale orange. Individuals showing a tendency in plumage characters towards the other race occur within the distribution of each. In both races there is some variation in the degree of intensity of the crimson areas of the plumage, and often odd red or yellowish feathers occur in the black of the mantle. Generally speaking, it can be said that the northern race inhabits areas of fairly high rainfall, whilst the southern one is found in low rainfall areas.

I have examined three aberrant examples of this species representing one of the northern and two of the southern race as detailed below; all three are from the collection of the National Museum of Bulawayo:

N.M. no. 14745. Male, Rukwh, Tanzania, 25th November, 1953. 8° 20′ S., 37° 40′ E. An area of high rainfall of *ca.* 40 inches per annum.

Black of face normal; usual crimson of head, nape and breast replaced by cadmium-orange, becoming more yellow in tone on the breast; wing edgings yellow and not crimson.

N.M. no. 56518. Male, near Nata, Bechuanaland (now Botswana), 12th November, 1964. 20° 11′ S., 26° 12′ E. A low rainfall area with *ca.* 10–15 inches per annum.

Head (including face), nape, throat orange, becoming cadmium-yellow on the breast; wing edgings yellow.

N.M. no. 56525. Male, near Mouchi, Bechuanaland, 14th November, 1964. 21° 17′ S., 25° 52′ E. Another low rainfall area.

This is a "diluted" specimen in which the head, nape, throat and breast are a pale scarlet instead of the normal deep scarlet.

DISCUSSION

These three specimens exhibit an interesting range of variation from the normal. In no. 14745 there has been a modification of the carotenoid pigmentation whereby the normal deep scarlet or crimson has given way to orange and yellow. Specimen no. 56518 is somewhat similar, the difference in the shades of orange and yellow being small. Specimen no. 56525 presents a less radical change, with the normal scarlet "diluted" to a much paler shade. In all three specimens the melanins in the plumage have not been affected by these changes.

The yellow and orange, as compared with the normal intense scarlet coloration, of specimens 14745 and 56518 would appear to represent a relapse of the specialized red pigment into a more primitive phase of pigmentation. This theory is supported by the findings of Harrison (1965) who has shown that in the Ploceidae there is a tendency for yellow pigment to be present not only in those parts of the plumage where it may have some signal value in epigamic displays, but also where it is masked by heavily melanized plumage. The theory is that in many of the Ploceidae there has been a fairly rapid evolution of very varied black patterns superimposed on a mainly yellow plumage, with no loss of the yellow pigment from the completely melanized areas. The species studied by Harrison were those with black and yellow plumage. Those species with red and black plumage present a similar but less well-known problem. Certainly in the Red-headed Weaver, examination of black mantle feathers shows that a reddish pigment is present but masked by the melanin. This is also indicated by the not infrequent occurrence of red or yellowish feathers on the mantle. On the other hand the male Black-winged Red Bishop *Euplectes hordeacea* (L.) described in an earlier paper (Sage, 1962) had the melanin replaced by white, whilst the red pigment was unaffected. This suggests that in some of the Ploceidae there may be no masked carotenoid pigments in areas of completely melanized plumage.

There is no doubt that the red and yellow pigments in the Ploceidae are carotenoids. This point was, I believe, investigated by the late Professor A. J. Marshall, although I cannot recall the reference. The carotenoids in both the breeding and eclipse plumages of the Red or Orange Bishop *Euplectes orix* (L.) were investigated by Kritzler (1943) who proved the presence of three carotenoids—two red pigments that he designated R_1 and R_2 and lutein. Following an analysis of the diet of captured birds he suggested that R_1 might be an intermediate in the oxidative decomposition of dietary carotenoids. The red pigment R_2 he thought might be a derivative of lycopene. The source from which wild birds obtained the base material for R_2 was not known. In the case of the Black-headed Weaver *Ploceus cucullatus* (Müller), one of the yellow and black species, Brockmann and Volker (1934) found only lutein, but Kritzler found traces of the red R_1 carotenoid also. Professor Volker has recently told me that the yellow pigment in this species is xanthophyll. In the Red Bishop, a black and red species, Kritzler identified no canary-xanthophyll although Brockmann and Volker listed this species as containing a little of this compound. However, Kritzler did find lutein, accompanied by the two red carotenoids, in this species. These results are not directly comparable as the workers concerned used different techniques in extracting and studying the pigments. Furthermore, there has been some confusion in the nomenclature as applied to lutein and xanthophylls.*

What we now have to consider is the nature of the process by which the normal intense scarlet pigmentation in the Red-headed Weaver has been replaced by yellow in specimens 14745 and 56518. This phenomenon is found occasionally in the Crimson-breasted Shrike or Burchell's Gonolek *Laniarius atrococcineus* (Burchell), and the biochemical aspects of this particular case have been discussed by Volker (1964). He found that in normal (red-breasted) individuals the yellow carotenoid pigments obtained from the food are changed, possibly by means of oxidative conversion, into the red carotenoid astaxanthin. In the yellow-breasted mutants this ability has been lost due to a genetical defect, and the yellow pigment is deposited in the feathers in an unaltered form. This yellow pigment is in fact canary-xanthophyll and is probably comparable with that found in the Ploceidae, as what was classed as lutein by the earlier workers would now be regarded as xanthophyll. It would seem that the genetical aspects of Volker's postulate can be applied to the replacement of the typical intense scarlet by yellow in the aberrant *Anaplectes*. However, the metabolic change of the ingested yellow carotenoid into red pigment may not be entirely oxidative. It has been suggested, I think by Zechmeister (1937), that this conversion is due to fragmentation and cyclization of the long-chain molecules of carotene. I do not know if the red pigment(s) found in the Ploceidae have ever been specifically identified.

The reason for the "dilute" plumage of specimen 56525 is not clear in the absence of chemical tests and microscopic examination of feather sections: it may, however, be worth noting that Volker (1962) has shown that in the red canary, both rhodoxanthin and carotene will produce a soft pink colouring. It may be that some dietary factor is responsible for the aberrant colour of this specimen.

ACKNOWLEDGMENTS

I am most grateful to Michael P. Stuart Irwin of the National Museum of Rhodesia at Bulawayo, for sending me the aberrant specimens of the Red-headed Weaver for study. For helpful discussion on variation in this species I have to thank Mr. C. W. Benson.

References:

Brockmann, H. and Volker, O. 1934. Der gelbe Federfarbstoff des Kanarienvogels (*Serinus canaria canaria*) und das Vorkommen von Carotinoiden bei Vogeln. *Hoppe-Seyl. Z.*, 224: 193–215.

Fox, H. M. and Vevers, G. 1960. *The Nature of Animal Colours*. London.

Harrison, C. J. O. 1965. Concealed yellow pigment in the breeding plumage of some weavers. *Bull. Brit. Orn. Cl.*, 85: 44–47.

Kritzler, H. 1943. Carotenoids in the display and eclipse plumages of bishop birds. *Physiol. Zool.*, 16: 241–255.

Sage, B. L. 1962. Albinism and melanism in birds. *Brit. Birds*, 55: 201–225.

— 1965. Comments on plumage variations in the genus *Euplectes* Swainson. *Bull. Brit. Orn. Cl.*, 85: 42–44.

Volker, O. 1962. Experimentelle Untersuchungen zur Frage der Entstehung roter Lipochrome in Vogelfedern. *Jnl. Orn.*, 103: 276–286.

---

* Fox and Vevers (1960) apply the term xanthophyll to the group of carotenoids in which oxygen has been added to the carbon and hydrogen atoms to give hydroxyl groups. The term lutein (3:3′-dihydroxy-a-carotene) is reserved for the carotenoid which has sometimes been called xanthophyll.

— 1964. Die gelben Mutanten des Rotbauchwurgers (*Laniarius atrococcineus*) under der Gouldamadine (*Chloeiba gouldiae*) in biochemischer Sicht. *Ibid.*, 105: 186–189.

Zechmeister, L. 1937. Die Carotinoide im tierischen Stoffwechsel. *Ergebn. Physiol. Biol. Chem. u. exp. Pharmakol.*, 39: 117–191.

Buphaga Africanoides A. Smith, 1831 a nomen oblitum?

My recent recommendation in *Bull. Brit. Orn. Cl.*, vol. 88, 8, 1968, pp. 135, 172 that *Buphagus erythrorhynchus africanoides* A. Smith, 1831, should now replace *Buphagus erythrorhynchus caffer* Grote, 1927, has been questioned in light of the requirements of Article 23 (*b*) of the *International Code of Zoological Nomenclature*, 1961. In case other workers should also believe I have acted against one of the requirements of the *International Code*, it should be pointed out that the adoption of the name *africanoides* Smith, 1831, in place of *caffer* Grote, 1927, is not contrary to the terms of the Article concerned, as the name was republished in 1880 in the Willughby Society's reprint of Smith's collected South African works on birds, some 49 years after its original publication. Subsequent to the republication of the name in 1880, it again appears in Sherborn, *Index Animalium*, vol. AB, 1922, p. 134.

Strangely enough, *B. africanoides* is not alluded to in Sharpe, *Cat. Birds Brit. Mus.*, vol. xiii, 1890, and Reichenow, *Vög. Afrikas*, vol. ii, 1903, or in any other standard work on the birds of the Ethiopian Region, and appears to have been overlooked by ornithological scholars. It cannot, however, be dismissed as a nomen oblitum under the requirements of Article 23 (*b*) because of its republication in 1880 (49 years after original publication) and listing in Sherborn in 1922 (42 years after republication). P. A. CLANCEY

Clancey 1968, *Bull. Brit. Orn. Cl.* 88, pp. 135, 172 points out that Sir Andrew Smith in 1831, *South African Quarterly Journal* No. V, p. 12, gives the name *Buphaga Africanoides* to a Red-billed Oxpecker. He argues that, having priority, this name should now be used in place of *Buphagus erythrorhynchus caffer* Grote 1927, for the southern race.

He has since told us (*in litt.*) that to his knowledge Smith's name has not appeared in literature since its introduction except in the Willughby Society Reprints of 1880 and in Sherborn 1922, *Index Animalium*, vol. AB, p. 134. In the latter work it appears only as a name in an index.

It is thus clear that *B. africanoides* Smith 1831 is "a name that has remained unused as a senior synonym in the primary zoological literature for more than fifty years". Such a name shall, by Article 23 (*b*) of the *International Code of Zoological Nomenclature* 1961, "be considered a forgotten name (nomen oblitum)" and must be referred to the International Commission "to be placed on either the appropriate Official Index of Rejected Names, or, if such action better serves the stability and universality of nomenclature, on the appropriate Official List".

This has been pointed out to Mr. Clancey who has accordingly referred the name to the Commission. Meanwhile the same Article of the *International Code* rules that "A nomen oblitum is not to be used unless the Commission so directs".

C. W. BENSON
B. P. HALL

The ruling of the International Commission on Zoological Nomenclature will be published in the *Bulletin*.—ED.

The evolutionary position of the snow geese as suggested by certain goose hybrids and variants

by James Harrison and Jeffery Harrison

Received 20th October, 1968

The tendency for certain hybrids among the Anatidae to show a close resemblance to species other than those involved in their parentage is now well known. In a recent note on a Wigeon *Anas penelope* x Chiloe Wigeon *Anas sibilatrix*, which strongly resembled the American Wigeon *Anas americana*, we listed a number of examples of this phenomenon (Harrison and Harrison, 1968). This included one example of an intergeneric goose hybrid, in which a Grey Lag Goose *Anser anser* x Atlantic Canada Goose *Branta c. canadensis* resembled the blue phase of the Lesser Snow Goose *Anser c. caerulescens* (Harrison and Harrison, 1966).

These hybrids provide evidence of phylogenetic relationships. This has been conclusively demonstrated in hybrids involving Delacour's (1956) group of "Blue-winged Ducks", an evolutionary line of *Anas* including the Garganey *A. querquedula*, Blue-winged Teal *A. discors*, Cinnamon Teal *A. cyanoptera*, Argentinian Red Shoveler *A. platalea*, Cape Shoveler *A.* smithi, Australasian Shoveler *A. rhynchotis* and Northern Shoveler *A. clypeata*. This group shows an increasingly specialised bill as the line develops from the least specialised Garganey to the most specialised Northern Shoveler.

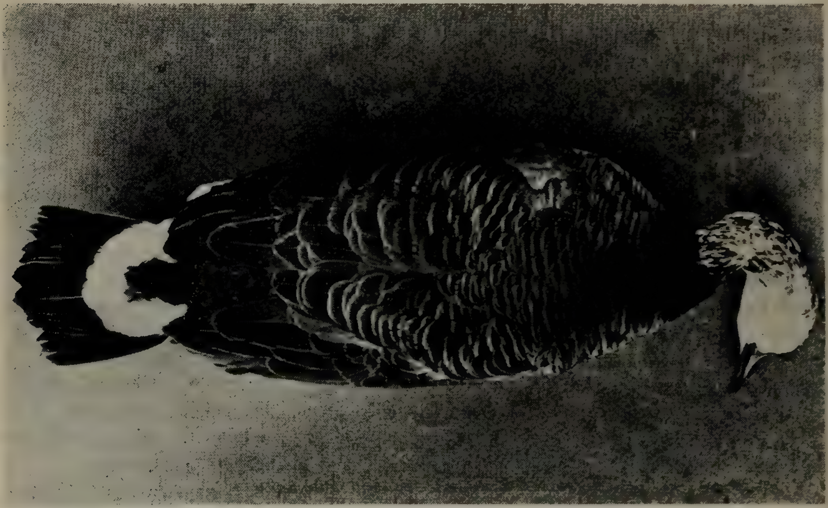
Hybrids involving Cinnamon Teal and Northern Shoveler give rise to progeny which are almost indistinguishable from the New Zealand Shoveler *A. r. variegata*, a species which lies in between these two in the evolutionary tree (Harrison and Harrison 1965 and in press). Other examples were quoted by Gillham, Harrison and Harrison (1966) involving hybrids of the genus *Aythya*.

Bearing these facts in mind, the occurrence of two intergeneric goose hybrids showing a basic "blue snow goose pattern", take on an increasing significance. The first of these, the Grey Lag Goose♂ x Canada Goose♀ has already been described in detail. It was a female which basically had a white head and neck with an increasing amount of dark striations extending down the neck. The remainder of the plumage was intermediate between the two parent species.

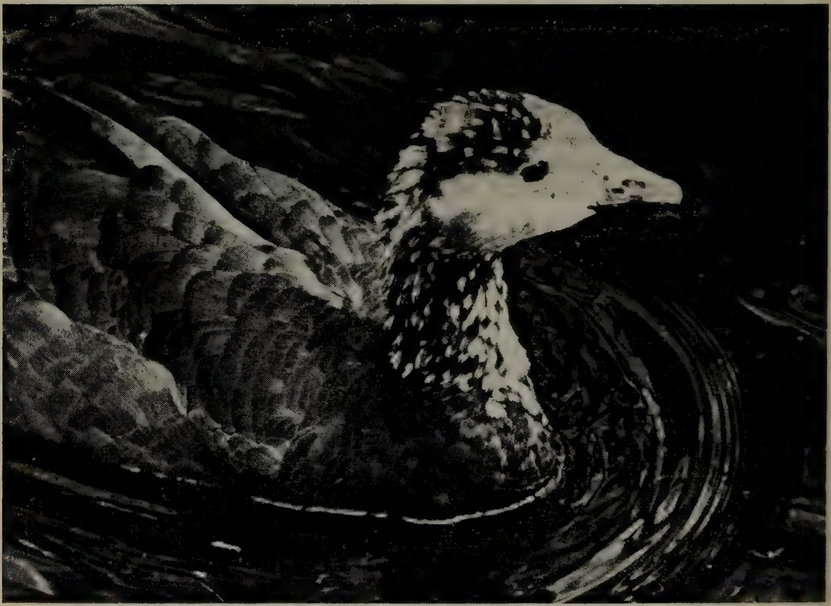
The second intergeneric hybrid is between a Barnacle Goose, *Branta leucopsis*♂ x White-fronted Goose *Anser a. albifrons*♀ bred by Alastair McLean, who kindly presented it to us. This hybrid also shows a strong tendency towards a "blue snow goose pattern" in that it has a white forehead, cheeks and throat, the remainder of the crown and neck being strongly flecked with white. Like the previous hybrid, the remainder of the body plumage is intermediate between the two parent species. While it is possible to recognise the Barnacle influence in the white forehead and cheeks the white striations on the remainder of the head are clearly derived from neither parent.

There is another *Branta* species which produces a variant pattern on the head and neck remarkably similar to this latter hybrid. This is the giant Canada Goose *B. canadensis maxima*, a race which has been described in detail by Hanson (1965). Examples are illustrated in plates 22 and 23 of Hanson's monograph showing this. Very rarely the other large races of the Canada Goose also show this variation.

A number of examples of variants have been described in the Anatidae which are considered to result from recessive genes and to indicate phylogenetic relationships (Harrison and Harrison 1963). This includes such examples as white neck rings in the Teal *Anas c. crecca* and Gadwall *Anas strepera.*



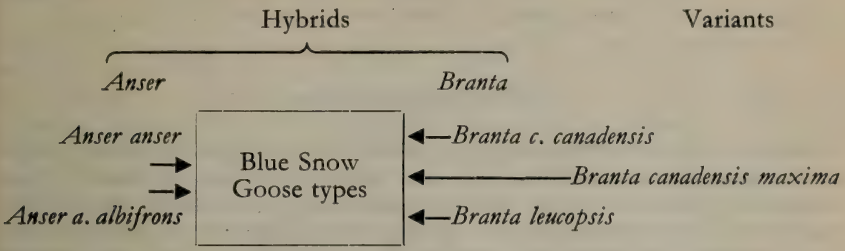
Anser anser x *Branta canadensis*



Photos: Pamela Harrison

Branta leucopsis x *Anser a. albifrons*

Thus we have a further example indicating a relationship between the *Branta* geese and the snow geese. This can be illustrated graphically as follows:



This indicates that the snow geese are really a link between the genera *Anser* and *Branta*. Clearly this is so with *Branta*, both on the evidence of hybridisation and on *Branta* variants.

It seems likely that the white plumage of the snow geese has developed as a more recent plumage, in view of the fact that both *A. caerulescens* and *A. rossii* have brownish-grey juvenile plumages.

It is only in the blue phase of *A. c. caerulescens* that the dark plumage persists into adult life.

According to Dr. John Aldrich (*fide* Glen Smart, *in litt.* 15th August, 1968) the blue phase of the Lesser Snow Goose is expanding its range westwards, and its numbers are undoubtedly increasing and this is confirmed by Professor David Parmelee.

The implications of the two plumage phases of this snow goose are by no means yet biologically meaningful and obviously require further study.

The snow geese are now generally included in the genus *Anser*, although at one time in a genus of their own—*Chen*. The justification for a separate genus is considered insufficient for this to be upheld, and Delacour (1954) supports the division of the true geese into the two genera of *Anser* and *Branta*, while stating that the two are closely related. Our findings clearly link the two through the snow geese.

ACKNOWLEDGMENTS

We are grateful to Jim Ellwood and John Ruxton for obtaining the Canada Goose x Grey Lag Goose for us; also to Alastair McLean for the Barnacle Goose x White-fronted Goose. Glen Smart and Professor David Parmelee advised us on the latest position of the blue phase of the Lesser Snow Goose, for which we are also grateful, as we are to Dr. Pamela Harrison for the two photographic illustrations.

References:

Delacour, J. (1954–1956). *The Waterfowl of the World*, Vols. I and II.

Gillham, E. Harrison, J. M. and Harrison, J. G. 1966. A study of certain *Aythya* hybrids. *Wildfowl Trust 17th A.R.*: 49–65.

Hanson, H. C. 1965. *The Giant Canada Goose*. Illinois Univ. Press.

Harrison, J. M. and Harrison, J. G. 1963. A Gadwall with a white neck ring and a review of plumage variants in wildfowl. *Bull. Brit. Orn. Cl.* 83: 101-108.

— 1965. A Cinnamon Teal x Northern Shoveler hybrid. *Bull. Brit. Orn. Cl.*, 85: 107–110.

— 1966. Hybrid Grey Lag x Canada Goose suggesting influence of Giant Canada Goose in Britain. *British Birds*, 59: 547–550.

— 1968. Wigeon x Chiloe Wigeon resembling American Wigeon. *British Birds*, 61: 161–171.

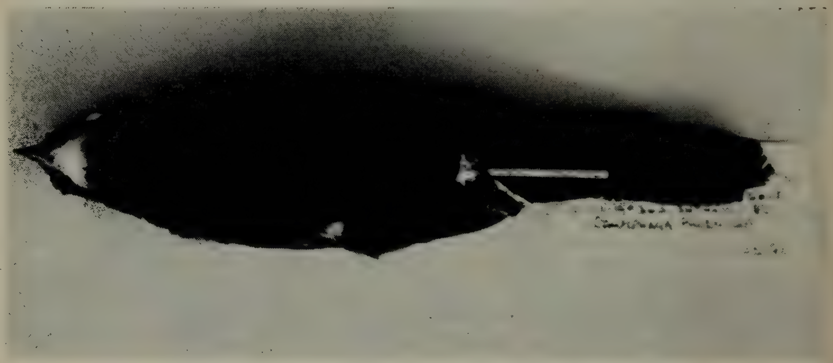
Symmetrical albinism, a possible secondary sexual character in the Black Cuckoo-Shrike *Campephaga phoenicea* (Latham)

by Michael P. Stuart Irwin and C. W. Benson

Received 3rd December, 1968

The Black Cuckoo-Shrike *Campephaga phoenicea* (Latham) ranges from Senegal to Eritrea and the Cape Province, over this enormous range dividing into three very distinctive races that are sometimes given specific status. The males are for the most part wholly blue-black, but differ in the degree of instability in the colour of the shoulder patches, which are red, or occasionally orange, in nominate *phoenicea*. In *C. p. petiti* Oustalet such shoulder patches are usually lacking, while in *C. p. flava* Vieillot yellow shoulder patches do occur, though rarely. Thus of 88 adult males of *C. p. flava* in the collection of the National Museum, Bulawayo, from south-central Africa northwards to Tanzania, only five are so marked, two of these being from Rhodesia with one each from Malawi, Tanzania and Moçambique. One of these in which the chin is wholly white is the principal subject of this note.

It is an adult male obtained by one of us (Irwin), at Dondo, 19° 34′ S., 34° 44′ E., in Moçambique on 14th June, 1968, where the species was relatively common on the borders of coastal forest clearings. While possessing yellow shoulder patches, this specimen has in addition a strikingly white symmetrical chinpatch, showing up in contrast to the otherwise normal glossy blue-black throat. This area of white extends from the junction of the mandibular ramus to approximately the commissure or about 10 mm. in depth. It was most noticeable in the field. The specimen is illustrated in the accompanying photograph.



No very detailed study appears ever to have been made on the display patterns of this, or any other member of the genus. Skead (1966: 71–75) provides some information, though none of this seems particularly relevant as to the precise function of the shoulder patches, though they do receive mention. However, it may be assumed that when present, they are of some significance. On the other hand, the swollen orange-yellow skin at the sides of the gape, together with the brightly coloured mouth, have a very definite function, as has been shown recently by Marshall *et al.* (1968: 203). Though it seems not to have been mentioned in the literature, this skin tends to become swollen and more highly coloured in the breeding season, when it takes on the appearance of an incipient wattle.

Its greatest development takes place in the related *Campephaga* (*Lobotos*) *lobata* (Temminck), in which it forms expanded lobe-like wattles at the corners of the mouth.

Whether or not the coloured shoulder patch is in the process of attaining genetic dominance depends upon which population is considered, but there seems little reason why such a conspicuous character, once evolved, should later become lost, if the modification of a more decorative gape is considered as a progressive adornment arising from a simpler function. Whatever the answer, the shoulder patch in *flava* seems to have attained little more status than a genetically recessive secondary sexual character, dominant only in nominate *phoenicea*. The possible tendency therefore for the addition of yet another character, in this instance, a white chin, cannot be dismissed, and may well also have a true genetic basis and is not necessarily a case of fortuitous albinism.

While there is no further evidence of albinism in the material of *C. phoenicea* in Bulawayo, examination by Benson of 189 males of this species in the British Museum (Natural History), from throughout its range, has revealed two specimens, both with red shoulder patches, showing some signs of it, as follows:

Registered number 76. 6. 1. 8, locality "Gold Coast", no date; a little white on the throat, upper breast and neck; nape mostly white; crown partly white, mostly on the sides, though with a narrow band of blue-black immediately above both eyes, while there is a narrow band of white across the forepart of the crown, adjacent to the blue-black forehead; two white feathers on the back. The white areas on the crown and nape are partially suffused with pinkish brown (possibly dried blood), and there is some yellow streaking.

Registered number 1910. 5. 6. 1325, Gunnal, Portuguese Guinea, 27th May, 1909: two white feathers on the throat, one on the neck; white more plentiful, quite irregularly, on the nape, crown and forehead.

Unlike the Moçambique specimen, in neither of these two from West Africa is there any sign of a symmetrical chin patch, or indeed of any white on the chin at all. Nevertheless in the one from the Gold Coast (Ghana) there seems to be some "attempt" at symmetry, but on the crown and nape.

A colour combination of a white chin against a contrastingly dark throat is not of uncommon occurrence and has evolved in members of several unrelated African passerine families. Thus it occurs in the females of the genus *Platysteira* and is again linked with the presence of wattles, in this instance above the eyes. It is one of the diagnostic characters of the recently described sibling bulbul species *Chlorocichla prigoginei* De Roo (*Rev. Zool. Bot. Afr.*, 75, 1967: 392). The reverse process has perhaps occurred in the barbet *Pogoniulus makawai* Benson and Irwin (*Bull. Brit. Orn. Cl.*, 85, 1965: 6), in which the chin is black, instead of dull white as in the related *P. bilineatus* (Sundevall).

In the preparation of this note our thanks are due to Mr. R. K. Brooke who commented upon part of an earlier draft.

References:

Marshall, B. E., Cooper, J. and Graves, J. V. 1968. Courtship behaviour in the Black Cuckoo-Shrike *Campephaga phoenicea*. *Ostrich*, 39 (3): 203.

Skead, C. J. 1966. A study of the Black Cuckoo-Shrike *Campephaga phoenicea* (Latham). *Ostrich*, 37 (2): 71–75.

Camaroptera stigmosus (Reichenow), the male breeding dress of *Camaroptera fasciolata* (Smith)

by Michael P. Stuart Irwin

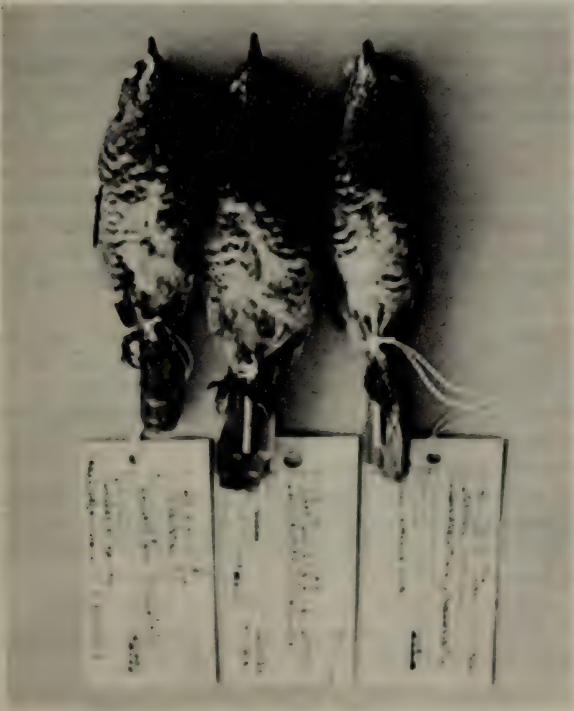
Received 10th December, 1968

Calamonastes stigmosus Reichenow, *Orn. Monatsb.*, 18, p. 8, 1910, type locality Windhuk (= Windhoek), South-West Africa, seldom receives mention in the literature, and is tacitly regarded as a synonym of *Camaroptera fasciolata* (Smith). It was based on a bird obtained by Lübbert, without date or indication of sex, in which the normally barred throat and upper chest is replaced by a uniform brown. There is, however, little agreement in the literature as to what plumage stage *stigmosus* really represents.

The first critical remarks on this name were by Roberts (1935: 142), on the basis of a single male from Gemsbok Pan, Botswana, obtained on 23rd April. Roberts stated that it was in much worn plumage, which has been confirmed by M. A. Traylor (*in litt.*) who has re-examined the specimen in the Field Museum of Natural History, Chicago, but Roberts incorrectly assumed, in referring this bird to *stigmosus*, that the accentuation of the brown markings had been due to wear and abrasion alone. Hoesch and Niethammer (1940: 265) were next to discuss this name, and considered that it represented either a mutant or the juvenile plumage stage. This latter view seems to have been followed by McLachlan and Liversidge (1957: 325), who state that the young have a spotted chin and a uniform brown throat and upper chest. Mackworth-Praed and Grant (1963: 260) merely give the young birds as being more russet brown above, and mention for the species that rarely the throat is wholly dusky. However, Macdonald (1957: 134) more correctly described the juvenile, based on a specimen obtained at Kamanjab on 23rd April, as very like the adult except for a slight wash of yellowish on the breast. It may be added that this yellow wash is short lived but that generally birds with little skull ossification can be distinguished by the duller, heavier and generally less clearly defined barring of the underparts.

In the collection of the National Museum, Bulawayo, there are 41 specimens of *C. fasciolata* collected at all seasons of the year from the following territories: Rhodesia (9), Botswana (30) and South-West Africa (2). Those from Rhodesia and South-West Africa were obtained only in the months of May and June, but the larger Botswana series provide a virtual round the year representation except for the months of June and August, the former month being covered by three of the Rhodesian specimens. Of the Botswana series, no less than 14 specimens, collected between 24th November and 4th March, or in the period of the rains, are of *stigmosus* type. Thirteen of these are sexed as males, one as a female. *Stigmosus*-plumaged birds are on the other hand not represented at all from any of the series obtained from April onwards, though as shown below, a number of brown-throated birds are known from this month, though not between May and October, the dry season. These brown-throated birds give every indication of being in breeding condition, as would be expected from the time of year. One such bird obtained by the writer near Lake Dow on 19th November, had the gonads greatly enlarged as had another from near Rakops on 24th of the same month. The whole region at this period south of the Makarikari Pan complex, where the species is common, had experienced recent heavy rains and the birds could be heard calling throughout the day, so breeding was probably by then general.

On this evidence it must be assumed that *stigmosus* is nothing other but a distinctive annual breeding dress: however some slight problem remains. Thus while 10 out of the 14 specimens collected between 24th November and 4th February are a uniform brown, flecked occasionally with buffy white, most noticeable towards the chin, four others collected in the latter half of the rains between 14th February and 4th March have the brown areas more broken up and flecked with buff. In two of these birds obtained respectively on 25th February and 4th March, the throat and chest are actively in moult, with now, more buffy feathering beginning to show against the brown background. A further two males and seven females obtained between 3rd November and 24th April are more problematical. Six of these, all sexed females, are more heavily barred on the throat, chest and flanks, with some incipient tendency towards assuming a brown throat and chest. One such bird collected on 24th April is moulting in this region, while a further two obtained on 12th January (one of them sexed as a male), appear to have been in breeding condition. There may, however, have been some mis-sexing, the two males in reality being females. Accordingly the only completely brown-chested female may also be a male. However, there does appear to be a certain



Breeding dress of *Camaroptera fasciolata.*
Left: ♀ with unusually heavy barring, 25th February.
Right: 2♂♂ in typical *stigmosus* dress, 19th November and 21st January.

amount of individual variation within the *stigmosus* plumage stage and it is not always easy to assess the degree or state of moult, though it is always most distinctive (photo). It now seems clearly established that the male of *fasciolata* assumes a distinctive breeding dress and that there may be some corresponding darkening of the barring in the females, though this is not so clearly established.

Why exactly the brown plumage stage should sometimes begin to moult out in the latter half of the rains is not fully understood, but it may well depend in general on seasonal climatic conditions, as the population as a whole lives in a region of erratic and irregular rainfall. This is shown by one of the Rhodesian birds still very obviously immature and with little evidence of skull ossification, as late as 27th June. All five of the Rhodesian birds obtained in May are in fully barred winter dress, though all are still in the process of post-breeding moult of the primaries and rectrices.

Apart from the material available in Bulawayo, all other records of *stigmosus*-type birds known to the writer, that are either sexed or dated, are of males in the breeding season. Thus this applies to the worn bird obtained by Roberts and the two discussed by Hoesch and Niethammer, collected on 21st November and 16th March. Traylor (1965 : 363), who obtained two males at Shakawe and Sepopa, informs me that these specimens taken on 16th January and 10th February are both in *stigmosus* dress. They were then in breeding condition with the plumage moderately worn, though breeding was almost certainly delayed in that year (1962), due to the lateness of the rains.

Mr. C. W. Benson has kindly examined on my behalf the material in the British Museum (Natural History). Of the series there some 20 specimens collected between 13th March and 16th October are in the normal barred plumage. Two further birds, however, are in breeding dress. One, unsexed but undoubtedly a male, is from the "Tatin River, Matabeleland" (see *Ibis*, 1881: 236), at 21° 25′ S., 27° 55′ E., in what is now Botswana, and was obtained on 13th December, 1880. There is also a more recent Rhodesian specimen from north of Beit Bridge obtained on 5th April and originally from the collection in Bulawayo. Both have the chin white, barred with brown, but whereas the first has some buffy white shafts on the throat, the other is a uniform brown.

Of the first series the only specimens of note are a male from Otjosimgambe, Waterberg, South-West Africa, already apparently in non-breeding dress on 13th March, and there are another two males from near Kamanjab in the Kaokoveld obtained on 13th April in similar plumage. However, if breeding should take place early in a good rainy season, moult into the non-breeding dress would probably be accelerated.

Mr. G. Stuart Keith of the American Museum of Natural History has in turn kindly reported upon the material in that institution. Therein is a single bird in *stigmosus* dress, a male from South-West Africa, obtained on 6th April, while a female obtained on 10th of the same month is barred throughout, as in another from Lobito Bay, Angola, on 26th April.

The series of birds in the *stigmosus*-type dress, discussed above, may be summarized by months as follows:

Nov.	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*Apr.*
3	2	7	6	2	3

It seems rather surprising that *fasciolata* should have developed such a relatively distinct mode of breeding dress in the male, particularly so as it is not found in the very closely related *C. stierlingi* and *C. simplex*. Irwin (1960: 47–60) reviewed the relationships of this complex of barred warblers, but demonstrated in particular that this species was distinct from *stierlingi* and that there was a geographical overlap. The reason why such a seasonal dress should have evolved, apparently only fully developed in the males, is obscure.

Nevertheless in this context it is as well to look at the genus *Camaroptera* as a whole. White (1960: 712–718) listed seven species, to which an eighth, *Camaroptera* (*Euryptila*) *subcinnamomea*, should now be added, following Clancey (1966: 489). Thus *subcinnamomea* seems to be little more than a somewhat more colourful geographical representative of the *fasciolata* group, with deep cinnamon chestnut distributed over parts of the plumage and with the barring obsolescent, but with a typically "spotted" *fasciolata*-type chin. There is perhaps some geographical overlap between them, but the ecological requirements appear to be distinctive so that for all intents and purposes they would be allopatric.

The genus therefore becomes divisible into two discrete groups. The *fasciolata* group accordingly consists of *fasciolata*, *stierlingi*, *simplex* and *subcinnamomea*, all relatively long-tailed usually barred forms, and the *brachyura* group, with *brachyura*, *superciliaris*, *chloronota* and *lopesi*, the last sometimes retained in a monotypic genus, *Poliolais*. Of the *fasciolata* group only *fasciolata* has a seasonal mode of dress accompanied by sexual dimorphism. In the *brachyura* group, however, both seasonal dress and sexual dimorphism occur. Thus *brachyura* has a seasonal mode of dress in some races, not in others, and the sexes are similar. In *superciliaris* there is neither seasonal dress nor sexual dimorphism, while in *chloronota* the sexes are moderately dissimilar. In *lopesi* they are markedly so, but again there are no seasonal differences. Whether or not a seasonal dress exists or the sexes differ, seems more or less random without any definite pattern in the different species, nor does there appear to be much evidence of a geographical or climatic relationship, except perhaps in the still imperfectly understood *brachyura* racial complex.

Accordingly it is not all that surprising that a seasonal mode of dress linked with sexual dimorphism should occur in at least one member of the *fasciolata* group.

In the preparation of this note my thanks are due to Mr. C. W. Benson for reporting on the material in the British Museum (Natural History) and for commenting on this note in draft; Mr. G. Stuart Keith of the American Museum of Natural History supplied information on the material in that institution, while Major M. A. Traylor also reported on that in the Field Museum of Natural History, Chicago. I am also grateful to Professor Dr. Erwin Streseman, who examined for me the type of *stigmosus* in the Zoologische Museum, Berlin, and finally to Mr. P. A. Clancey, Director of the Durban Museum, for the loan of material of *C. subcinnamomea*.

References:

Clancey, P. A. 1966. A catalogue of the birds of the South African sub-region, part 4. *Durban Mus. Novit.*, 7 (12): 465–544.

Hoesch, W. and Niethammer, G. 1940. Die vogelwelt Deutsch-Sudwestafrikas. *J.f.O.*, Sonderheft 88: 1–404.

Irwin, M. P. S. 1960. Relationships within the *Camaroptera fasciolata–stierlingi–simplex* complex of warblers. *Durban Mus. Novit.*, 6 (3): 47–60.

Macdonald, J. D. 1957. *Contribution to the ornithology of western South Africa.* Trustees of the British Museum, London.

Mackworth-Praed, C. W. and Grant, C. H. B. 1963. *Birds of the southern third of Africa.* 2. Longmans, London.

McLachlan, G. R. and Liversidge, R. L. 1957. *Roberts' birds of South Africa.* Central News Agency, Cape Town.

Roberts, A. 1935. Scientific results of the Vernay-Lang Kalahari Expedition, March to September, 1930. Birds. *Ann. Transv. Mus.*, 16 (1): 1–185.

Traylor, M. A. 1965. A collection of birds from Barotseland and Bechuanaland. *Ibis*, 107: 357–384.

White, C. M. N. 1960. A check list of the Ethiopian Muscicapidae (Sylviinae) part 3. *Occ. Pap. Nat. Mus. S. Rhod.*, 26B: 653–738.

A Sheathbill, *Chionis alba* (Gmelin) on St. Helena

by A. Loveridge

Received 4th November, 1968

That an Antarctic bird whose normal range is 50° S. (from Kergulen Island to the Falklands) should turn up 4,000 miles away on the north-west coast of St. Helena Island, 15° S., is so remarkable that the circumstances are worth recording.

On 16th May, 1968, until stopped by Supt. Frank Martin of the St. Helena police, some children were observed throwing stones at a pure white bird "rather like a cross between a pigeon and a gull," feeding on the rocks immediately below Jamestown Jetty. It appeared exhausted and next morning was still in the vicinity until picked up by Sergt. Max Fuller, who took it to the Superintendent. Mr. Martin, who is quite familiar with the Island avifauna, noted the wattles, blunt spurs on the wings, sturdy legs with only a trace of web between two of its four toes, so brought it to me for identification.

Except for the naked skin about the base of the beak being greyish, rather than pink, the bird agrees well with the coloured figure in O. L. Austin's 1962, *Birds of the World*, p. 128. The black pupil was narrowly ringed with brownish, encircled by a narrow ring of light blue, beyond which the rest of the eye is greyish-blue. After chloroforming this strange member of the Charadriiformes, in preparing its skin (now M.C.Z. 288,535), I noted that, unlike most seabirds, there was no fat underlying the skin. Yet Sheathbills, though allegedly averse to taking to the water, are said to be good swimmers. The crop contents and body are preserved in alcohol, while from the feathers I removed half-a-dozen semi-transparent lice (*Quadraceps ornatus antarcticus*).

Occasionally stray migrants reach St. Helena, though it is over 1,000 miles from the nearest mainland; the occurrence of this bird was so improbable, however, that I enquired whether any ship from the Falkland Islands or further south had called in lately. I then learned that at 10.30 p.m. on 15th April, 1968—*i.e.* the day before the Sheathbill was seen on the rocks—a Russian tanker named *Tallin* had put in to James Bay to land a member of the crew requiring medical attention. After receiving treatment the patient returned to his ship which sailed at 2.30 a.m. the same night. This vessel was said to have been in the Antarctic. In this connection it is interesting to see the Sheathbills photographed by H.R.H. the Duke of Edinburgh (1962, *Birds from Britannia*, photos 51, 52) on the rail of his yacht while she was lying off Deception Island, South Shetland Islands.

I take this opportunity of thanking R. A. Paynter, Jr., of the Museum of

Comparative Zoology for confirming the identification, and for obtaining the correct name of the lice from Robert Dalgleish to whom I am also indebted.

An unreported hybrid *Metopiana peposaca* × *Anas georgica*

by Milton W. Weller

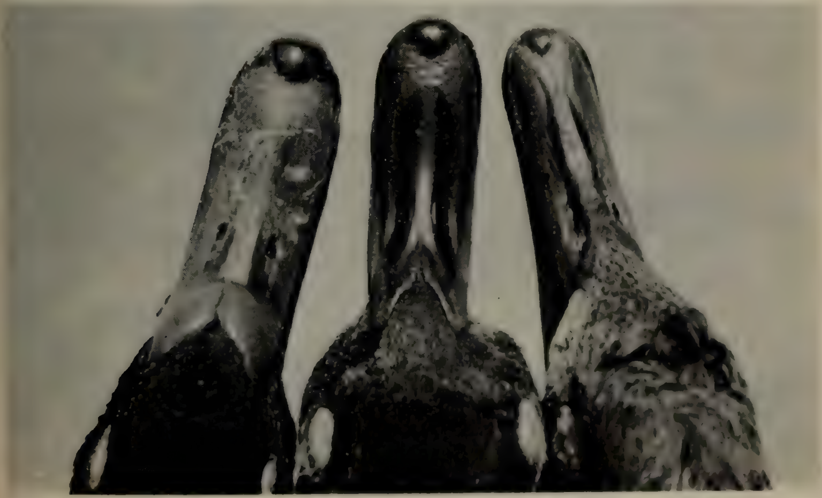
Received 3rd June, 1968

During recent studies of the plumages of certain South American ducks, a hybrid of the Rosy-billed Pochard, *Metopiana peposaca* (Vieillot) and Yellow-billed Pintail, *Anas georgica spinicauda* (Vieillot) was found at the Peabody Museum of Yale University. Since this previously unreported cross involves a genus of uncertain standing (*Metopiana* versus *Netta* of Delacour 1959), a description of the specimen seems worth recording.

This specimen (Peabody Museum No. 22775) was collected by C. S. Reed at Batuco Lake in Santiago Province, Chile, in June 1938. It was recognised in the Yale collection because it had the general size and colour of a Rosy-billed Pochard, but had a black pattern on the bill like that of a Yellow-billed Pintail. The label has the following notes, showing that Reed recognised the bird as a hybrid, that it was collected with Yellow-billed Pintails and that he had compared it with 185 typical examples of that species:

> "Hibrido natural entre *Metopiana peposaca* (Vieill) y *Peocilonetta spinicauda* (Vieillot). Reed No. 5385 VI–1938."
>
> "Cazado en Batuco, en una laguna. Estaba una gran banadada de *P. spinicauda* (fué cazado con 185 ejemplares de *P. spinicauda*)".

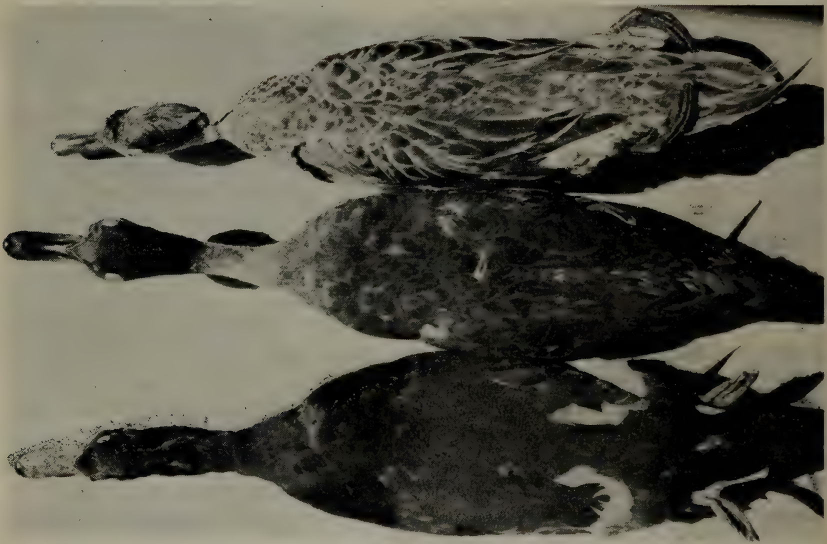
The hybrid is illustrated in Figs. 1 to 3 with a typical Rosy-billed Pochard



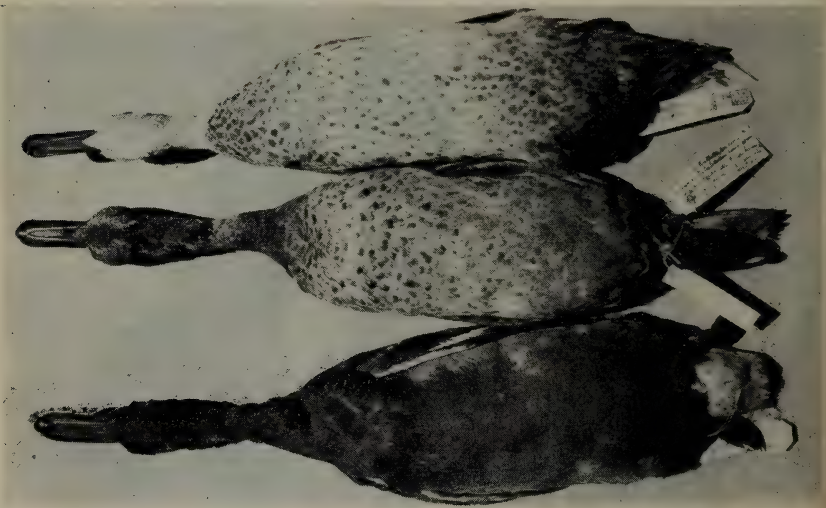
Bills of Rosy-billed Pochard (left), the hybrid (centre), and a Yellow-billed Pintail (right).

and Yellow-billed Pintail collected by Reed in the same area. The hybrid is intermediate in size, colour pattern, tail length and the shape and size of the bill. Some measurements of the three specimens are given in the Table.

The colours of the upper mandible are faded, but the black pattern of the



Dorsal view of typical Yellow-billed Pintail (top), the hybrid (middle), and a Rosy-billed Pochard (bottom).



Ventral view of typical Yellow-billed Pintail (top), the hybrid (middle), and a Rosy-billed Pochard (bottom).

Yellow-billed Pintail is evident (Fig. 1). The basal area of the mandible near the forehead is inflated like that of a Rosy-billed Pochard.

The age of the bird is uncertain. Superficially, it looks like a young male Rosy-billed Pochard that has lost its juvenal tail feathers and is acquiring its first nuptial plumage. There is a prevalence of brown on normally black areas, however, and many of the feathers have the width and sheen of adult feathers. Thus, it is probable that much of the definitive nuptial plumage is present, but of an intermediate colour.

The feathers of the head and upper neck are blackish with brown bases, producing a mottled appearance. The back is a deep brown, and the scapulars are edged with tan. The feathers of the chest are light tan with dark central spots like those of the pintail, but the spots are blackish rather than brown and are flecked with white. The belly is generally white like an immature pochard, but many feathers have brownish spots like those of the pintail (Fig. 3). The side feathers of the hybrid are tan, frosted with white and black, whereas those of the pintail are plain brown with tan edging and those of the pochard are vermiculated white and grey-brown. The undertail-coverts of the hybrid are off-white with tan edging and are vermiculated centrally with black. Those of the Rosy-billed Pochard are pure white, and those of the Yellow-billed Pintail are brown with tan edging.

The secondaries lack the white pattern of the Rosy-billed Pochard but the tertials have a slight green iridescence as is characteristic of that species. The tail is intermediate in length (Table) and the central rectrices are shorter, less pointed and broader than are those of the typical Yellow-billed Pintail.

Measurements (in mm.) of the hybrid *Metopiana peposaca* × *Anas georgica* and typical examples of these species.

TABLE

	Length	*Bill* *Width*	*Nail width*	*Tail length*
Metopiana peposaca Yale Peabody No. 22770	59.4	22.0	10	62
Hybrid Yale Peabody No. 22775	49.5	20.3	9	91
Anas georgica spinicauda Yale Peabody No. 22763	45.9	17.0	6	125

DISCUSSION

Intergeneric and intertribal hybrids have been reported commonly among Anatidae. According to Johnsgard (1960), crosses between certain species of dabbling ducks (Tribe Anatini) and inland diving ducks (Tribe Aythyini) are regular. Hybrids of *Netta rufina* and *Anas* spp. are especially common and the similarity of behaviour of *Netta rufina* and typical species of *Anas* is well-known (Johnsgard 1965). The Rosy-billed Pochard *Metopiana peposaca*, however, is much more nearly similar to typical *Aythya* in all respects and does not seem properly placed in the genus *Netta* (Johnsgard 1965, *loc. cit.;* Weller 1967). Thus, it is significant that little hybridization between Rosy-billed Pochards and dabbling ducks has been reported in spite of the common occurrence of this species in zoos and private waterfowl collections.

ACKNOWLEDGMENTS

I would like to thank Dr. Charles G. Sibley for arranging my visit to the Peabody Museum and Mrs. E. H. Stickney for her able assistance during my stay. My studies were financed by a Chapman Grant from The American Museum of Natural History.

References:

Delacour, J. 1959. *The waterfowl of the world*, vol. III. Country Life Ltd., London. 270 pp.
Johnsgard, P. A. 1960. Hybridization in the *Anatidae* and its taxonomic implications. *Condor* 62: 25–33.
— 1965. *Handbook of waterfowl behavior*. Cornell Univ. Press, Ithaca, N.Y. 378 pp.
Weller, M. W. 1967. Notes on some marsh birds of Cape San Antonio, Argentina. *Ibis* 109: 391–411.

Journal Paper No. *J–5821* of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. Project No. 1504.

Observations from the Interior of Muscat and Oman during 1966—67

by Peter A. Smith

Received 14th October, 1968

Introduction

Between January 1966 and August 1967 I was able to spend fifteen months in the Sultanate of Muscat and Oman, five three-month tours, four of them in the Interior. Whilst working from a number of camps in different areas it was possible to cover much of the Interior and make some observations of the avifauna. The time spent in any one area varied from a week to two months, unavoidably resulting in an incomplete picture being obtained of the birds in each area. From the scattered observations, however, it is hoped to throw some light on the bird life of an otherwise virtually unknown area.

The area covered lies north of latitude 21° 20′ and west of longitude 58°, between the Mountains of Oman to the east and north-east, and the sandy borders with Abu Dhabi and Saudi Arabia to the north-west and west. Numerous wadis run in a roughly south-westerly direction from the foothills of the mountains, through gravel plains, towards the sand dunes in the west and the desolate salty depression of the Umm as Samim. The population is concentrated in towns and villages in the foothills, with Bedus scattered amongst the wadis.

Resident birds

Most of the resident bird population is likewise concentrated in the foothills and wadis where permanent vegetation occurs, along with the few scattered pools. In these areas Small Pin-tailed Sandgrouse *Pterocles exustus* is perhaps the most numerous and widespread species. Lichtenstein's Sandgrouse *Pterocles lichtensteinii* was also found in good numbers in the Huraymah area and *Spotted Sandgrouse *Pterocles senegallus* recorded at Afar. The Great Grey Shrike *Lanius excubitor* is thinly but widely distributed in most large wadis, along with smaller overall numbers of Arabian Babblers *Turdoides squamiceps* which are invariably seen in parties of five or six. The Egyptian Vulture *Neophron percnopterus* and Raven *Corvus corax* are particularly common around rubbish dumps at most camp sites, and uncommon elsewhere. At the Afar camp dump up to seven large vultures, probably Griffon Vultures *Gyps fulvus* were seen in January 1966. A huge nest was reported in February 1966 and located ten feet up in the crown of an isolated tree in the Huraymah area. No bird was seen, however, and the nest, about five feet across, was empty. Single large vultures were seen on two occasions in May and July 1966 in the Wadi Aswad area.

Among the resident larks the Black-crowned Finch-lark *Eremopterix nigriceps* is particularly numerous in the Yawa-Suneinah area in winter. In summer, small flocks were recorded around the Wadi Biladi and Jebel Aswad camps in 1966 and in the Wadi Amairi in 1967. The Hoopoe-lark *Alaemon alaudipes* has a remarkably wide, but thin distribution, occurring in near desolate regions even in mid-summer. One was observed displaying in Wadi Aswad in May 1966. Desert Larks *Ammomanes deserti* are well distributed. The status of the Crested Lark *Galerida cristata* appears uncertain. Records from Afar in winter and Wadi Amairi in summer suggest that it may be resident, with increased numbers in winter.

Near the foothills, a few Grey Francolin *Francolinus pondicerianus* and Sand Partridge *Ammoperdix heyi* were found between Awaifi and Ibri. Around the towns and villages House Sparrows *Passer domesticus* and Crag Martins *Ptyonoprogne rupestris* are common. At Ibri the Little Green Bee-eater *Merops orientalis* and Purple Sunbird *Cinnyris asiatica* appear to be resident. A flock of *c.* 20 Rock Doves *Columba livia* were seen feeding on cultivated land outside Ibri in March 1967 and a single bird was seen in Wadi al Ayn to the south on 29th November, 1966. These birds may have come from the mountains where they are resident. The Senegal Dove *Streptopelia senegalensis* was recorded infrequently in small numbers in widely scattered areas, and regularly at the Wadi Zibra camp during the autumn passage of 1966. The *Little Owl *Athene noctua* was recorded on a few occasions between Wadi Aswad and Suneinah from June to December in 1966. On 15th July, 1966, a *Barn Owl *Tyto alba* was seen hunting around the Jebel Aswad camp in the early morning. Meinertzhagen gives no daylight hunting records in *Birds of Arabia*. Next day a Barn Owl, presumably the same one, was rescued from a drum of water into which it had fallen. In November 1966 a Little Owl was caught in a hole in the ground in Wadi al Ayn, and after examination was released. Presumably both species of owl are resident. A pair of Hume's Chats *Oenanthe alboniger* were recorded daily in January 1966 at Afar. *Birds of Arabia* suggests that these were resident.

Winter visitors

In winter this resident population is reinforced by a variety of visitors, most of them in small numbers. The Desert Wheatear *Oenanthe deserti*, however, arrives in large numbers in the autumn and was recorded in all areas covered, being particularly common in the Yawa area. Desert Warblers *Sylvia nana* are also well distributed but in smaller numbers. These two species were the only winter visitors which were regularly recorded in different areas.

At Afar, where permanent water pools occur in Wadi Halfain, the following species were recorded between the 18th and 26th January, 1966:

*Moorhen *Gallinula chloropus:* 6+, daily.

Coot *Fulica atra:* 6+, daily.

Teal *Anas crecca:* 2 on 18th, 1 on 21st.

Redshank *Tringa totanus:* 1 on 21st.

Green Sandpiper *Tringa ochropus:* 1 on 18th.

Greenshank *Tringa nebularia:* 1 on 18th, 5 on 21st.

Little Ringed Plover *Charadrius dubius:* 4 on 24th.

Around the Afar camp up to four *Starlings *Sturnus vulgaris* in the same period and a few White Wagtails *Motacilla alba* were present daily. This appeared to be near the northern limit of their winter range, as only one single bird was seen north of Afar in winter, at Mamur in February 1966. An unidentified nightjar *Caprimulgus*? was seen at Afar on 18th January.

Unfortunately only nine days were spent in this interesting area before I moved north to a camp in the Huraymah area. In this waterless region only the commoner residents, in particular Small Pin-tailed and Lichtenstein's Sandgrouse, two common winter visitors, Desert Wheatears and Desert Warblers, and the following were recorded during February 1966:

Houbara Bustard *Chlamydotis undulata:* One obtained by a Bedu west of Jebel Qusayba; this species may be resident.

Lesser Whitethroat *Sylvia curruca:* Two seen in a wadi near Mamur on 10th February, presumably indicating that the species winters in Interior Oman (also recorded on the Batinah coast in winter).

*Red-tailed Chat *Oenanthe xanthoprymna:* Single bird on rocky outcrops near Jebel Qusayba on 5th and 7th February.

Hoopoe *Upupa epops*: Single birds in the same area on the same dates.
An unidentified nightjar seen in headlights near the Huraymah camp.

Of the 1966–67 winter, only November and December were spent in Interior Oman, in the Yawa area. Here, a more uniformly lightly vegetated area, again waterless and with some sand dunes, a few new species were recorded. The usual residents and common winter visitors were seen. A feature of the bird life here was the abundance of Black-crowned Finch-larks. New winter visitors were as follows:

*Short-eared Owl *Asio flammeus:* 2 on 20th November, 1 on 17th December.

Cream-coloured Courser *Cursorius cursor*: 3 on 21st November.

Kestrel *Falco tinnunculus:* Single birds seen on 28th November and 14th December.

Long-legged Buzzard *Buteo rufinus:* Single birds seen at close range on 27th November and 11th December, one perched and one pursuing a hare.

Isabelline Wheatear *Oenanthe isabellina:* One around camp during December.

Black-throated Thrush *Turdus ruficollis:* 1♂ on camp, 15th December.

29th November, an unidentified thrush was seen briefly in Wadi al Ayn. Song Thrush sized, it was predominantly grey-brown, with paler throat and moustachial streaks. In flight, rufous underwing was visible.

A Blue Rock-thrush *Monticola solitarius* at Ibri on 23rd February, 1967, had presumably wintered there, unless it was an early migrant.

Single Houbara Bustards were seen on 19th November and 17th December.

The remainder of the 1966–67 winter was spent on leave and on the Batinah coast.

Spring migration

Early in March the first passage migrants begin passing through Interior Oman. Most records are for the spring of 1966, but the earliest evidence of migration was seen on 3rd March, 1967, near Ibri, whilst on a brief visit from the coast. Swifts *Apus apus* were passing along a valley in the foothills in the early morning at a rate of several hundred per hour. In 1966, however, single birds, *Apus apus/pallidus?* were seen on only two occasions, on 27th March and 11th May. An Isabelline Shrike *Lanius cristatus* and a Hoopoe were seen in the foothills of the Hamrat Duru on 5th March. *Pied Wheatears *Oenanthe leucomela* and Red-tailed Chats were seen on most days in mid-March in the Wadi Zibra/Wadi Aswad areas. Also seen in the Wadi Zibra were a White Wagtail on 11th March, a Black Redstart *Phoenicurus ochruros* on 18th March and a Blue Rock-thrush on camp the same day. This bird was still present next day, when a ♂ Rock-thrush *Monticola saxatilis* was seen in a nearby wadi. The first Swallow *Hirundo rustica* was seen on 25th March, followed by a few others at the Wadi Zibra camp next day, along with *c.* 10 White Wagtails, a Wheatear *Oenanthe oenanthe* and a few unidentified wheatears. Apart from a Swift on the 27th and an Isabelline Shrike on the 29th the only migrants seen in this area from 27th March to 7th April were a few White Wagtails and unidentified wheatears.

From 8th–20th April, 1966, I was on leave, and during this period in 1967 I was on the Batinah coast, resulting in a regrettable gap in observations. In 1966 at this time a considerable movement of Rollers *Coracias garrulus* was reported by local Bedus, two of whom said that they had each shot seven (for food) on one day alone in the Wadi Zibra area. Judging from the feathers around camp this was probably not an exaggeration.

21st April: At the Wadi Zibra camp: 1 Isabelline Shrike, 1 White Wagtail, 2 wheatears(?), and a flock of *c.* 15 Bee-eaters *Merops apiaster* passed over. One Roller in a nearby wadi.

22nd April. Wadi Zibra camp: 1 Isabelline Shrike and 1 Rufous Warbler *Agrobates galactotes*. Wadi Zibra: 1 Buzzard *Buteo buteo*. Wadi Aswad: 1 Isabelline Shrike and 1 Roller. Masruq camp, Wadi al Ayn: 1 Rufous Warbler and 1 Spotted Flycatcher *Muscicapa striata*.

23rd April: Masruq camp: As for 22nd, plus a ♂ *Ortolan *Emberiza hortulana* and a Roller nearby.

24th April: Masruq camp: 2 Ortolans, 1 Spotted Flycatcher and another Ortolan a few miles away.

25th April: Masruq camp: Red-backed Shrike *Lanius collurio*, 3 Ortolans and a Rufous Warbler. In open country nearby a Tree Pipit *Anthus trivialis*, exhausted, died soon after being picked up.

26th April: Wadi Zibra camp: 1 Wheatear. Huraymah area: 1 Roller, 1 Lesser Whitethroat, 2 Whitethroats *Sylvia communis*, a Spotted Flycatcher and 2 Rufous Warblers.

27th April: Wadi Zibra camp: 1 Yellow Wagtail *Motacilla flava*.

29th April: Wadi Zibra camp: 1 ♂ Ortolan.

3rd May: Wadi Zibra camp: 1 Swallow and 1 Rufous Warbler.

5th and 6th May: Wadi Zibra camp: 1 Spotted Flycatcher and 1 Swallow.

7th May: Wadi Zibra camp: 1 Yellow Wagtail and *c*. 5 unidentified warblers, possibly Reed Warblers *Acrocephalus scirpaceus*. These were skulking in the shade beneath caravans and very difficult to observe.

8th May: A few warblers still around camp.

9th and 10th May: Wadi Zibra camp: 1 Swallow, 1 Yellow Wagtail and a Spotted Flycatcher, also on the 11th a Swift over Wadi Aswad.

13th May: A ♂ Red-backed Shrike in Wadi Aswad.

14th to 20th May: A few "reed-type" warblers on camp, and a Spotted Flycatcher.

In 1966 no spring passage migrants were seen after 20th May. In 1967 much of the spring passage was observed on the Batinah coast, and only the tail-end from 20th May onwards was seen in the Interior. At a desolate camp on the northern edge of the Umm as Samim the following observations were made:

20th May, 1967: 1 Sand Martin *Riparia riparia* and a probable Mourning Chat *Oenanthe lugens*.

21st May: 1 Swallow.

22nd May: 1 Sand Martin.

25th May: 1 unidentified pipit, probably a Tree Pipit.

A late Swallow passed over on 9th June, the first bird seen since 25th May.

Summer observations

After the spring migration, the bird life at camp sites away from the large wadis and the foothills is reduced to the scavengers and possible straggling migrants. At small camps even the scavengers are absent in June, July and probably August. In open country the only birds which might be seen are occasional Hoopoe-larks and Desert Larks. It is possible to drive for hours without seeing a bird, but in the larger wadis, particularly near the foothills, the commoner residents can usually be found.

During the summer months of 1966, up to the end of July I was working in the region of Wadi Aswad, from camps in Wadi Zibra and on Jebel Aswad. Towards the end of May Small Pin-tailed Sandgrouse were nesting. Several nests were found near Wadi Aswad, towards the Hamrat Duru. These were usually in shadeless burning gravel plains, sometimes near light vegetation affording some shade and usually contained three eggs. Meinertzhagen states in *Birds of Arabia* that usually two eggs are laid and that the nests are never in shade. Nests were only found when the perfectly camouflaged sitting hen rose at the last possible moment to avoid being run over by vehicles.

Sand Partridges with young were seen on Jebel Aswad in June. Black-crowned Finch-larks appeared in a flock around the Wadi Zibra camp on 9th June, and thereafter were seen regularly during the summer at the Jebel Aswad camp. A Little Owl was seen near here on 25th June and a Barn Owl was caught and released on camp on 15th and 16th July. An unidentified black and white chat was seen flying across a pass through Jebel Aswad in June. It appeared to be carrying something and may have been breeding. In the nearby wadis, Great Grey Shrikes and Arabian Babblers were present as usual, along with House Sparrows and a few Crag Martins around the Bedu camps and walls. Only occasional Egyptian Vultures and Ravens were seen at this time of the year.

The summer of 1967 was spent in and around two camps on the northern edge of the Umm as Samim, one near the Saudi Arabian border and the other in the Wadi Amairi. The Umm as Samim is a low-lying drainage area for many of the wadis crossing Interior Oman. Shaped like a rough triangle with sides about 80 miles long, it consists of wet sand covered by a crust of salt, the surface of which varies from being flat to resembling a miniature moonscape with walls of rock-salt up to three feet high, and impassable to normal vehicles. Apart from these areas Land Rover access varied from being very good to treacherous in parts and impassable in very boggy areas. Nothing grows here and any bird life will be straggling migrants.

The late spring passage migrants recorded at the camp near the border in May–June 1967 were mentioned earlier. After the late Swallow on 9th June the next bird seen on camp was an exhausted *Terek Sandpiper *Xenus cinerea* on 18th June. First seen, and then photographed, in the shade of a tent, it was later caught inside one. Next day, like most birds found in this condition, it died. On 16th July the next bird appeared, a Hemprich's Gull *Larus hemprichii* flying crazily around camp at midday, when the shade temperature was, as usual, around 125°F. It died shortly after being picked up. A Hoopoe-lark in a sparsely vegetated wadi north of camp appeared to be the only resident within 30 miles of camp during June–July.

On 22nd July, 1967, following a rare rainstorm which resulted in part of the Umm as Samim being flooded for some weeks, a Red-necked Phalarope *Phalaropus lobatus* was seen and photographed on a small salt water pool in the centre of the Umm. The bird appeared normal and to be feeding, although the saturated water was almost certainly lifeless. Next day it had gone. This was the only bird recorded during about 80 hours travel through the Umm as Samim in the summer of 1967, during which most parts were visited.

On camp, a Common Sandpiper *Tringa hypoleucos* arrived on 27th July, followed by single Swallows on 31st July and 1st August, marking the beginning of the autumn migration.

In contrast to the desolate surroundings of the one camp, the other summer 1967 camp was situated near the Wadi Amairi, wide and thickly vegetated with many trees. Here, summer visiting Eastern Turtle Doves *Streptopelia turtur* were common, flocks of up to 20 being seen. A few Senegal Doves were present, and a squab shown to me by a Bedu indicated that they were breeding. Other birds recorded were occasional Hoopoe-larks and Great Grey Shrikes, small flocks of Black-crowned Finch-larks, a Little Green Bee-eater at Awaifi on 8th June and another near camp on 11th August.

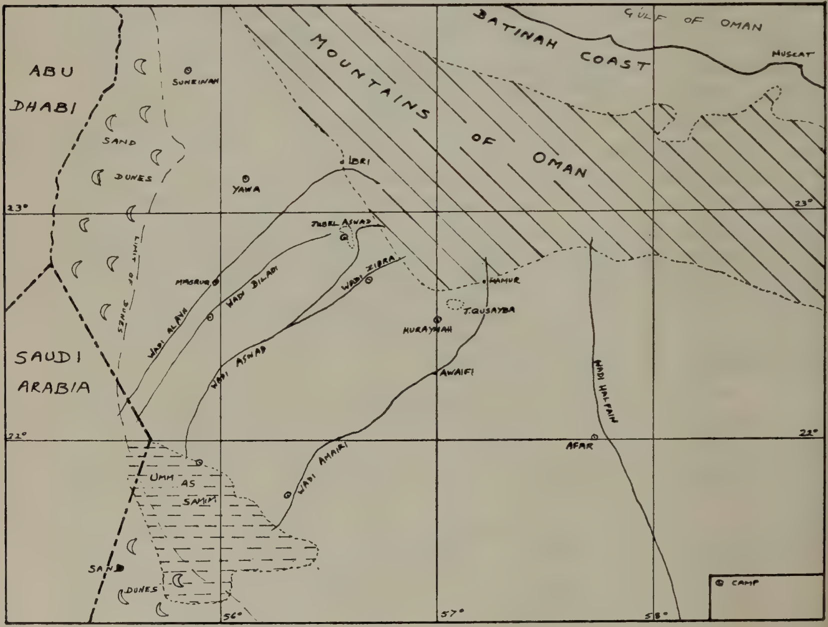
The first autumn passage migrant in this area was a Green Sandpiper, on camp, on 4th August when a Hoopoe and an unidentified wheatear were also seen, in the Wadi Amairi. Next day a "ring-tailed" harrier *Circus?* was recorded, flying rapidly through the trees. On 13th August two Houbara Bustards, two Ravens—the first of the summer, and *c.* 10 Crested Larks were seen in the wadi.

Autumn migration

In 1966, two months after the last spring passage migrant was seen, the first of the autumn passage migrants appeared. On 19th July Long-legged Buzzards were seen in two areas in the Jebel Aswad region. One of the birds was disturbed from a freshly killed hare. A Spotted Flycatcher appeared at the Jebel Aswad camp on 29th July. The few records in July 1967 from the Umm as Samim area confirmed that the first autumn migrants begin appearing towards the end of July. The August 1967 records suggested that only a trickle of migrants was passing through at that time. Leave in August and September 1966 and my departure from Oman in mid-August 1967 resulted in an unfortunate gap in observations. All other autumn passage records are for October onwards, 1966.

The variety of species encountered in October 1966 was quite surprising, although the visible migrants were in no great numbers. At the Wadi Zibra camp a Spotted Flycatcher was present from 1st–3rd October, accompanied by a Swallow on the 2nd and a Wheatear on the 3rd.

From 3rd–30th October all observations were made in and around a camp situated near Wadi Biladi between the Wadis Aswad and al Ayn, towards the edge of the Empty Quarter. The surroundings were desolate gravel plains with scant vegetation, except in the major wadis about 15 miles away. The


BATINAH COAST
GULF OF OMAN
MUSCAT
ABU DHABI
SUNEINAH
SAND
DUNES
MOUNTAINS OF OMAN
IBRI
YAWA
23°
23°
JEBEL ASWAD
MASRUQ
WADI BILADI
WADI ZIBRA
WADI AL AYN
LIMIT OF SANDS
HAMUR
T. QUSAYBA
HURAYMAH
WADI ASWAD
AWAIFI
WADI HALFAIN
SAUDI ARABIA
22°
22°
AFAR
WADI AMAIRI
UMM AS SAMIM
SAND
DUNES
56°
57°
58°
CAMP

SKETCH MAP OF INTERIOR OMAN

only residents seen in this area were occasional Ravens, Egyptian Vultures and flocks of Small Pin-tailed Sandgrouse flighting to water. In the Wadi al Ayn these sandgrouse were common, with a few Hoopoe-larks, Black-crowned Finch-larks and Desert Wheatears.

On camp, Swallows were recorded daily, *c.* 10 on the 24th being the peak daily total. White Wagtails were first recorded on the 4th, but not again until the 21st, thereafter two or three daily until camp was moved on the 30th. Wheatears, usually not identified, appeared in ones and twos daily until the 14th, including an Isabelline Wheatear on the 4th. A ♂ Desert Wheatear was on camp on the 17th and 21st. A probable Tree Pipit arrived on the 17th and one or two were present daily until the 23rd. A similar pipit, exhausted, was caught in open country near camp on the 17th and positively identified as a Tree Pipit. Single records of other migrants were as follows:

4th: A *Spotted Crake *Porzana porzana* skulking beneath parked vehicles; also a Hoopoe and a Sand Martin.

10th: An Isabelline Shrike, which remained on camp for six days.

12th: A warbler, possibly a Reed Warbler, skulking in the shade of caravans.

13th: An unidentified nightjar was disturbed from scant vegetation near camp. A Collared Dove *Streptopelia decaocto* arrived on camp and stayed for two days.

16th: In Wadi al Ayn a possible Chiffchaff *Phylloscopus collybita* and a Long-legged Buzzard were seen. A few days later, after disturbing a hare with a Land Rover, a Long-legged Buzzard swooped and picked up the rabbit-sized hare just in front of the vehicle. The hare proved to be just too heavy and was dropped, and although injured it made off again, only to be pinned to the ground as the buzzard made another fast, accurate attack. This time the buzzard proceeded to devour its prey *in situ*, allowing approach to within 50 yards.

On camp two larks arrived but could not be positively identified.

18th: A *Bluethroat *Cyanosylvia svecica* arrived and stayed four days, showing little fear whilst feeding at the entrance of our mess tent.

A probable Lesser Whitethroat was seen briefly.

24th: An exhausted *Little Grebe *Podiceps ruficollis* was caught on camp. Not surprisingly it died the same night. I believe this was the first specimen to be obtained in Arabia and the skin is now in the British Museum.

From its appearance, with white bases to primaries and wing length of 103–104 mm. this bird was considered to be of the race *P. r. capensis*.

Whilst photographing the grebe, in the evening, a Quail *Coturnix coturnix* dropped out of the sky and was picked up. This bird appeared to recover after a day's rest, during which time it was offered water and cress seeds. It was released the following evening and was last seen flying strongly southwards. Of the various exhausted migrants picked up, this was the only one which appeared to recover.

25th: A Yellow Wagtail on camp.

26th: A crake was seen skulking beneath a caravan in the early morning. Time was not available for an immediate identification or possible capture, but it was fortunately still around in the evening when it was eventually caught. It was in fact a *Baillon's Crake *Porzana pusilla*, probably an immature.

Measurements were as follows. Wing 90–91 mm., culmen 15.5 mm., longest secondary 78 mm. The bird appeared in good condition and was released the following evening. Like the Quail it flew off strongly southwards, but returned towards camp, alighted, and was not seen again.

28th: A Great Grey Shrike was seen in open country, an unusual habitat, and may have been a migrant.

In November, at the Wadi Zibra camp a few Swallows and White Wagtails were recorded daily until the 10th. A *Cattle Egret *Ardeola ibis* arrived on camp and stayed two days. Swallows were still passing through in small numbers up until 2nd December and possibly later. At the Yawa camp west of Wadi al Ayn, no migrants were seen during the second half of November and December, apart from winter visitors; a late Swallow was, however, seen nearer the mountains on 17th December.

SUMMARY

During 1966–67, 75 species were identified in Interior Oman, five other species were probably identified and the identity of three other species remain vague. It is difficult to find any specific records from Interior Oman in Meinertzhagen's *Birds of Arabia*. The distribution details given for many species are vague, with information such as "recorded throughout our area" and "recorded near Muscat and Oman", making it difficult to determine just which species have been recorded in Oman. Virtually all the species mentioned in this paper are probably new records for the Interior and the 15 species marked with an asterisk are thought to be new for Oman. The Little Grebe is believed to be the first to be obtained in Arabia. Mention should be made of two species which are marked as probably new to Oman; a later record of the Spotted Crake has already been reported in the paper "Observations on wildfowl on the Batinah Coast, Muscat and Oman, South-east Arabia, 1962–1967" which appeared in the *Bulletin*, vol. 88, no. 4. Terek Sandpipers were seen regularly on the Batinah coast during February–April 1967, before the June 1967 record mentioned in this paper.

In conclusion I would like to add that the observations contained in this paper were, for the most part, made during very limited spare time, and in the course of a time-demanding seven-day-week occupation. Given the opportunity of visiting this area, someone better qualified, equipped for collecting, and with sufficient time, would undoubtedly turn up many new and interesting records.

ACKNOWLEDGMENT

I am most grateful to Dr. Jeffery Harrison whose infectious enthusisam encouraged me to write this paper.

Reference:

Meinertzhagen, R. 1954. *The Birds of Arabia*. Oliver & Boyd.

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Mr. John Yealland, The Zoological Society of London, Regent's Park, London, N.W.1. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers which cost 5*s*. each, should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Members who have back numbers of the *Bulletin*, which they no longer require are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 5*s*., payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, Mr. Martin W. Woodcock, 73 Hildenborough Crescent, Maidstone, Kent.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, 104 London Road, Sevenoaks, Kent.

Bulletin of the

British Ornithologists' Club

Edited by

JOHN J. YEALLAND

R.

Volume 89 No. 3 June 1969

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, B.T. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

Prof. J. E. Elgood

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayne

Dates of meetings to be held during 1969

15th July, 16th September, 18th November.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 89 No. 3 Published: 5th June, 1969

Annual General Meeting

The seventy-seventh Annual General Meeting of the British Ornithologists' Club was held at the Rembrandt Hotel, London, at 6 p.m. on Tuesday the 15th April, 1969 with Dr. J. F. Monk in the Chair.

The Minutes of the 1968 Annual General Meeting (*Bull. B.O.C.* 88(6): 97-98) were read, approved and signed.

The Minutes of the Special General Meeting held on the 17th December, 1968 (*Bull. B.O.C.* 89(1): 1-2) were read, approved and signed.

The Chairman drew attention to the fact that in the Report of the Committee for 1968, the statement that "it was clearly apparent that there was no desire to separate the two aspects of the Club" should be clarified. In fact, although this was the sentiments of the majority of those at the meeting, many differing views have been expressed by correspondents who did not attend in person.

The Accounts for 1968 were discussed. The question was again raised of those Members who were still paying only £1 subscription. It was decided that their names should be removed from the mailing list for the *Bulletin* when a sum equal to one year's subscription was owing. Allowances, however, would be made when non-compliance was unavoidable, e.g. due to currency regulations.

The question of the Audit fee being raised from £5 to £25 was also discussed. It was pointed out by the Hon. Treasurer that the Auditors had been charging an uneconomic fee for some years, and that it was most unlikely that the Club would be able to arrange for the Accounts to be audited for a fee less than £25, even if an individual Accountant were to undertake the task, which was a course not wholly acceptable to the Inland Revenue.

The adoption of the Report and Accounts was proposed by Capt. C. R. S. Pitman and seconded by Mrs. B. P. Hall, and passed unanimously.

There being no additional nominations to those proposed by the Committee, the following elections were made:

Mr. R. E. F. Peal to the Committee vice
Mr. David Calder who retired by rotation;
Mr. David Calder as Hon. Secretary vice
Mr. M. W. Woodcock who had retired;
Mr. Peter Tate as Hon. Treasurer;
Mr. C. W. Benson as Editor vice
Mr. J. J. Yealland who had retired.

The election of Dr. J. F. Monk as Chairman and Sir Hugh Elliott as Vice-Chairman was confirmed by the acceptance of the Minutes of the 1968 A.G.M.

The Chairman warmly thanked Mr. Woodcock for all his services to the Club during his term of office; and in the absence of Mr. Yealland, a formal vote of thanks for his services as Editor was unanimously adopted.

The re-election of the Auditors, Messrs. W. B. Keen & Co. was proposed by Mrs. Bradley, and seconded by Mr. Peter Tate, and carried unanimously.

The retiring Editor raised, by correspondence, the question of the number of free copies of the *Bulletin* supplied to Authors, particularly in view of the fact that each issue of the *Bulletin* was now larger. His view, with which the Meeting was in agreement, was that 30 free copies was excessive, and the Meeting agreed that a reduction in the number should be made. This alteration, however, requires an alteration of the Rules. The matter was referred to the Committee.

The removal of the Club's photographic equipment from the Rembrandt Hotel was discussed. As a temporary measure, it was decided to ask whether it could be stored in the B.O.U. office. It was also decided that the Committee should consider the sale of the present outdated equipment, and its replacement with modern and lighter equipment.

The problem of housing back numbers of the *Bulletin* was again raised, in anticipation of their having to be removed from the Museum at Tring. The Committee was asked to look into this problem further.

The meeting closed at 6.55 p.m.

The six hundred and fifty-eighth meeting of the Club was held at The Criterion, 24-36 Regent Street, London, W.1 on 20th May, 1969.

Chairman: Dr. J. F. Monk

Members present: 16; Guests 5.

Capt G. S. Tuck, D.S.O., R.N., gave an illustrated talk on Seabirds of the World.

The Sooty Falcon *Falco concolor* Temminck

by R. E. Moreau

Received 20th January, 1969

The documentation of the Sooty Falcon is most unsatisfactory. That it is possible to do a clean-up of some value is due in part to Mrs. B. P. Hall, who in conjunction with Derek Goodwin has examined the material in the British Museum (Natural History) for me and has kindly criticized this paper in draft. I am indebted also to Dr. M. C. Radford and to John Yealland for consulting references for me that I could not reach myself, and to C. W. Benson, Captain H. E. Ennion, Dr. C. Vaurie, Dr. E. Stresemann, Major W. Stanford and Dr. A. Zahavi for answering enquiries.

Biologically the Sooty Falcon is of extraordinary interest because it shares with Eleonora's Falcon the distinction of being the only species of bird that in any part of the north temperate zone starts to breed only after the summer solstice, an adaptation that enables it, like Eleonora's, to feed its young on the autumn migrants. I knew the bird in the 1920s, hunting bats over the Giza Zoological Gardens and also as liable to be seen at any hour of the day about the deeply dissected plateau east of the Nile in the neighbourhood of Cairo—*cf.* Goodwin's (1949) day-time record in similar country near Suez, where, he tells me, he saw a pair catch a Swallow in full daylight. Nicoll (1919) described it as "a resident in small numbers in Lower and Upper Egypt". What evidence then existed for "Upper" is not known—and it may be remarked parenthetically that, notwithstanding the imposing two volumes of Meinertzhagen (1930), Egypt south of Cairo and on both sides of the Nile Valley remains one of the worst-documented parts of Africa—but Tregenza (1951) has since supplied evidence for the prevalence of the bird all over the mountainous eastern desert and on the Red Sea coast from

July onwards. There he found its food to consist of bee-eaters, smaller migrants and also bats. Meinertzhagen (1930) included the statements, at first sight somewhat contradictory, that "a pair bred in 1928 near Ma'adi (near Cairo)" and that "a nest has yet to be found in Egypt". As recently as 1954 Meinertzhagen cited no locality east of Egypt, but Vaurie (1965) included in the species' range "Near East*, breeds in the Dead Sea depression".

West of the Nile there are records in half a dozen widely scattered localities, mostly in extreme desert. The man who subsequently became Burmese Wingate found these falcons associated with very small rocky outcrops in the utter desolation of the Sand Sea (a huge dune-system) south of Siwa (Moreau, 1934) and from the feathers round these places it seems that their prey there consisted of small passerines. The most westerly record seems to be at Ghat, on the south-western border of Tripolitania (Heim de Balsac & Mayaud, 1962), no credence being given to the locality "côtes de Barberie" in the original description of the bird by Temminck. The most south-westerly record is in Tchad at about 13° 45′ N., 13° 40′ E. (Salvan, 1967), where on 10th June one of the birds was feeding on a hatch of "hymenoptera" along with the swifts *A. aequatorialis* and *A. pallidus*. It had enlarged testes and was probably on its way to breed in the desert further north. In the Sudan it has been listed as "an uncommon resident in rocky jebels in the north" (Cave & Macdonald, 1955), but it seems to be recorded with certainty only from Port Sudan, Dongola and Darfur. Actually Lynes (1924) omitted the species from his Darfur list but a male and female he collected at Kulme, about 13° 30′ N., 23° 30′ E., on 14th and 21st June were included under *F. ardosiacus* (*Ibis*, 1925 : 397) and exist in the British Museum. Neither bird had enlarged gonads—from what appears below, perhaps, *pace* the Tchad record, the date was too early. The Dongola record is presumably based on the B.M. specimen from "Rowandab, Nubia" (an unidentifiable locality) collected on 10th September, well within the breeding season. The basis of the Port Sudan record remains uncertain, but over much of the mountainous desert north of this, between the Red Sea and the Nile, Tregenza (1951) became familiar with these birds. Of the breeding of *F. concolor* the best documentation comes from Clapham (1964) on the Dahlac Islands in the southern Red Sea off Massawa where Henglin had found the species a hundred years earlier. Eggs (2–4) and young were in the nest around the end of August.

From the foregoing, we have evidence that the Sooty Falcon breeds in three different types of arid environment: (1) islands, (2) deeply cut, mountainous desert such as fills the area between the Nile, the Red Sea and the north-eastern Sudan, to a total area of over 100,000 square miles (compare 93,000 for the United Kingdom), (3) an area of nearly one million square miles west of the Nile, with far more widely spaced "suitable" breeding sites in so far as rocky outcrops and precipitous faces are required. On 26th August, Booth (1967), however, found a pair with three eggs in a cairn a few feet high on the featureless "gravel sheet", utterly devoid of vegetation, west of Kufra Oasis. He repeatedly encountered this species between about 20° and 25° E. and as far south as 20° S. The falcons were mainly active at dawn and dusk, feeding on bats and on small migrants—he specifies Willow Warblers *Phylloscopus trochilus*, Whitethroats *Sylvia communis* and Subalpine Warblers *Sylvia cantillans*.

---

*"Near East" is, of course, an immensely vague expression and Vaurie (pers. comm.) states that no supporting or limiting details are now recoverable. A. Zahavi (pers. comm.) supports the record for the Dead Sea and is reasonably certain that the bird occurs in Sinai, but there is no evidence that it does so much further north. Since the foregoing was written, Professor H. Mendelssohn has informed me independently that there seems no evidence for breeding in Israel outside the Dead Sea depression, with certain breeding there limited to one nest "in the salt cliffs of Sodom".

By far the greatest breeding concentration of these falcons appears to be in the southern Red Sea, where Clapham (1964) found 170 pairs with eggs or young in that part of the Dahlac Archipelago which he visited in August. Very likely most of the numerous rocky islands that litter the Red Sea, especially on the Arabian side, are occupied by these falcons—note the record by Long (1961) at 18° 59′ N., 2nd May (very early), "about 100 miles from land". The Dahlac falcons had been feeding on very different, much larger migrants than those eaten in the Libyan desert, primarily Blue-cheeked Bee-eaters *Merops superciliosus*, Hoopoes *Upupa epops* and *Oriolus oriolus*, in that order of abundance.

A big question is how far south and east the breeding range of the species extends and it is, I am afraid, not too much to say that the answer has been bedevilled by Meinertzhagen. In 1930 he referred to "a pair which bred regularly in the Old Fort at Mombasa", a locality far away from the others cited, at about 4° S. and in a totally different climate and environment. In 1938 Jackson reproduced this statement, but later (Meinertzhagen, 1954) it became "in 1902 there used to be a small colony in the Old Fort". The record is now generally disbelieved but, since no dates are given, it may all be based on wintering birds (see below). Eastwards in Somaliland the species has been cited as breeding, but according to Archer & Godman (1937) it is "impossible to say whether it is resident or not". This opinion has evidently been influenced by the fact that the Somaliland records are all in May and June, by which dates "the ordinary migratory birds would have departed". True enough; but this is far from being an "ordinary" bird since it breeds after the summer solstice. Anyway, although Henglin recorded the species from the "Somali coast", of the three localities cited for specimens, the two identifiable are about 30 and 60 miles inland, and so likely to be on their way back from winter quarters.

The Gulf of Aden itself has not yielded the data on the Sooty Falcon that might have been expected. Myles North (1946) did not find it on the apparently eligible Mait Island nor during his long stay at Bandar Kassim, about 130 miles west of Cape Guardafui. (Following his regretted death his records have been lent to me for examination: he had hopefully prepared an index card for this species, but it contains no entries.) Moreover A. Forbes-Watson in his recent careful working of Socotra and Abd-el-Kuri failed to encounter the bird (Ripley & Bond, 1966), though Jones (1946) had recorded as "common . . . to all the islands" of the Brothers group, just west of Socotra, in August, what appeared to be *F. concolor*.

On 10th November, 1936, at 4° 40′ N., 49° 20′ E., about 100 miles off the East African coast, I saw three falcons I concluded were *concolor*, which, after circling round the ship, passed on westwards (Moreau, 1938). If the identification was correct it could only point to a breeding population far to the east. The last thing I would want to do is to insist on a compass bearing, but certainly the falcons approached from the side of the open Indian Ocean and this they are most unlikely to have done unless they had flown from some point east of 49° E. and probably much further east, at least towards the south-eastern corner of the Arabian peninsula.

Authors' current restriction of the breeding range of the Sooty Falcon to west of the eastern shore of the Red Sea no doubt derives from the obfuscations of Meinertzhagen (1954) which it is now possible to sweep away. First, there is no good reason to doubt the August specimen from Charbar, at about 60° 30′ E., on the Mekran coast, as recorded by Ticehurst (1927). It was collected by Cumming, curator of the Quetta Museum, who tentatively identified others of this species up to 300 miles further east (*ibid.*). As for the Muscat specimen (*Ibis*, 1886; 163) rejected by Meinertzhagen, the fact that its wings are cut shows that it had been in captivity and so conceivably, but in the circumstances of its time improbably, might not have been a local bird. However, H. E. Ennion (pers. comm.) during 1962–63 repeatedly saw Sooty Falcons on the coast of Oman some 250 miles in length that faces north-east past Muscat, between Sur and Sohar. Here there are long stretches of cliff 50–60 feet high and two islets, Fahl and Suadi, each 3–4 acres in extent with inaccessible cliffs of 30–40 feet. At Fahl Ennion observed 3–4 pairs on 19th June, 22 in the air at once on 22nd October; at Suadi one on 26th January, 4 on 31st January, 6+ on 15th April and 5 on 26th July. Furthermore, W. Stanford (pers. comm.), reconnoitring Fahl Island from a helicopter in June 1968, observed "at least six birds" there.

To fill in the great gap between the Red Sea on the west and the Oman and Mekran coasts in the east, one would expect Sooty Falcons to nest along the coasts of South Arabia and northern Somaliland, However, the only evidence for southern Arabia is negative: Green (1949) explicitly reported that on Masirah Island the only raptorial birds were the anomalous *Elanus caeruleus*. On the other hand we now have evidence for the Sooty Falcon in the Persian Gulf, where suitable breeding sites are probably in numbers. W. Stanford (pers. comm.) writes: "I saw two pairs at Yas Island in June, 1968. It is a fairly large island with a rocky and precipitous centre, uninhabited but accessible [about 75 miles s.s.w. of Abu Dhabi in the Trucial States]. It is used as an artillery and bombing range but most of this activity is concentrated on the flat plain rather than the central peaks. The falcons were very tame: they soared close to us as we sat upon the rocks and were particularly noisy at last light and indeed after dark. I was there for only about 24 hours, so could not see if they were nesting [probably too early]. I did not have time to examine either the cliffs or the east side of the Musandam Peninsula nor another rocky islet near Yas, but the former are very like those [occupied by the falcons] south of Muscat." Ennion's records in Oman in January, cited above, show that not all Sooty Falcons migrate, but most must do so.

Of the winter quarters the most remarkable documentation is that of Rand (1936). He found large numbers in the western (drier) parts of Malagasy from 23rd November (note how this accords with the November date of my birds off the East African coast) and 6th April. In different localities he recorded "twenty or more", "sometimes as many as fifteen", "common . . . sometimes as many as seven perched on one tree in open marshy country where trees were scarce", "in savanna country . . . often noted perched on low ant-hills". Twenty-three stomachs contained insect remains, mostly locusts; only one a bird. Even though *F. concolor* may not occupy more than about 100,000 square miles of Malagasy, Rand's records give an impression of numbers that are amazingly large if the breeding range were indeed limited to the Red Sea and westwards. Moreover the British Museum possesses no less than 20 specimens collected in Malagasy. The statement that the bird has reached Mauritius (Rountree *et al.*, 1952) 400 miles east of Malagasy is, however, erroneous; the specimen concerned, which is in Cambridge, is *F. eleonorae* (C. W. Benson, pers. comm.).

Mackworth-Praed & Grant (1955) made the generalization that the Sooty Falcon is "a regular winter visitor to eastern Africa in some numbers, as well as a resident". The details on which this was based cannot now be recovered (Mackworth-Praed pers. comm.). The mention of "resident" can only be based on that Mombasa record; and the evidence for wintering must have been at best tenuous since the British Museum possesses no African specimen from south of the Sudan, though its records show that it once had one (undated) from "Abyssinia". After the preparation of this book, however, Stresemann (1955) listed a specimen from Dar-es-Salaam on 24th March (1894), presumably in winter quarters, one from Ukerewe Island in Lake Victoria, and a third, also infuriatingly without date, from "Mossamedes". This last record Stresemann has asked me to correct, the specimen in fact having been collected in Moçambique by W. Peters in 1875. Jackson knew of one from Archer's Post in northern Kenya, again undated; however, there is now evidence for both wintering and considerable passage in Kenya. On the one hand, C. W. Benson tells me that the National Museum at Nairobi possesses specimens from Naivasha 18th December, Sabaki River 20th November and Nairobi 21st January. On the other hand, I. S. C. Parker has recently found it to be "a regular passage migrant in some numbers" through eastern Kenya and that on the lower Athi River it eats Queleas (L. H. Brown, pers. comm., who has seen Sooty Falcons also at Lake Nakuru). Eighteen hundred miles to the south, Clancey (1969) has just reported three records in Natal. From the standard works and subsequent information on the birds of Malawi, Zambia and Rhodesia the Sooty Falcon has never been recognized in that great block of territory, part of which it must surely at least traverse.

From all the foregoing we have highly sporadic but inexpugnable evidence that the Sooty Falcon winters in eastern Africa at least from the equator to 30° S., perhaps inland to Lake Victoria. As a breeding bird the Sooty Falcon should be looked for from the Dead Sea and the eastern shore of the Red Sea to Baluchistan and as a wintering bird from Kenya to Natal.

Evidently the Sooty Falcon must be much more numerous than Eleonora's, which is reliably estimated at 2,500 pairs ± 500 (Walter 1968), so that 10,000 of them would exist each autumn. Stresemann (1968) has calculated that Eleonora's would altogether take the equivalent of 13 million birds of the size of a Nightingale out of the autumn migrants. In terms of biomass the Sooty Falcons would take a far heavier toll, though not correspondingly in terms of individuals, because the prey species of the southern breeding birds are much bigger.

SUMMARY

Sooty Falcons breed in late summer from about 25° N., 10° E. in the Libyan Desert, through the neighbourhood of Cairo and east into Palestine, south to the Gulf of Aden, the northern Sudan and perhaps northern Tchad. There are good reasons for supposing that they breed also 1,000–1,500 miles further east in the Persian Gulf, on the coast of Oman and along the Mekran, so that the bird should be looked for along the south coast of Arabia, indeed in its interior also. Sooty Falcons feed on much bigger birds, *e.g.* bee-eaters, in the south of their range than in the north, where warblers bulk large, and in sum the Sooty Falcon population must take much heavier toll than do Eleanora's. In winter they are common in Malagasy but also occur from Kenya to Natal.

References:

Booth, B. D. Mcd. 1961. Breeding of the Sooty Falcon in the Libyan Desert. *Ibis*, 103a : 129–131.

Cave, F. O. & Macdonald, J. D. 1955. *Birds of the Sudan*. Edinburgh & London: Oliver & Boyd.

Clancey, P. A. 1969. *Falco concolor* Temminck in South Africa. *Bull. Brit. Orn. Cl.* 89 : 10–11.

Clapham, C. S. 1964. The birds of the Dahlac archipelago. *Ibis* 106 : 376–388.

Goodwin, D. 1949. Notes on the migration of birds of prey over Suez. *Ibis* 91 : 59–63.

Green, C. 1949. The Black-shouldered Kite in Masira (Oman). *Ibis* 91 : 459–464.

Heim de Balsac, H. and Mayaud, N. 1962. *Les oiseaux du nord-ouest de l'Afrique*. Paris: Lechevalier.

Jackson, F. J. and Sclater, W. L. 1938. *The birds of Kenya Colony and the Uganda Protectorate.* London: Gurney & Jackson.

Jones, R. B. 1946. An account of a visit to the Brothers (Jebel Teir) Islands in the Gulf of Aden. *Ibis* 88 : 228–232.

Long, R. C. 1961. Some land birds noted at sea. *Ibis* 103a : 131–133.

Lynes, H. 1924–25. On the birds of north and central Darfur. *Ibis* (11) 6 : 399–446, 648–710; (12) 1 : 71–131, 344–416, 541–590, 757–797.

Mackworth-Praed, C. W. and Grant, C. H. B. 1952. *Birds of eastern and north-eastern Africa.* London: Longmans.

Meinertzhagen, R. 1930. *Nicoll's birds of Egypt*. Vol. 2. London: Hugh Rees.

— 1954. *Birds of Arabia*. Edinburgh & London: Oliver & Boyd.

Moreau, R. E. 1934. A contribution to the ornithology of the Libyan desert. *Ibis* (13) 5 : 595–632.

— 1938. Bird migration over the north-western part of the Indian Ocean, the Red Sea and the Mediterranean. *Proc. Zool. Soc. London,* 108 : 1–26.

Nicoll, M. J. 1919. *Handlist of the birds of Egypt*. Cairo: Govt. Press.

North, M. 1946. Mait Island—a bird rock in the Gulf of Aden. *Ibis* 88 : 478–501.

Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Am. Mus. Nat. Hist.* 72 : 143–499.

Ripley, S. D. and Bond, G. M. 1966. The birds of Socotra and Abd-el-Kuri. *Smithson. Misc. Coll.* 151 (7).

Rountree, F. R. G. *et al.* 1952. Catalogue of the birds of Mauritius. *Mauritius Inst. Bull.* 3 : 155–217.

Salvan, J. 1968. Contribution à l'étude des oiseaux du Tchad. (Part). *Oiseau* 38 : 53–85.

Stresemann, E. 1955. Das Jugendkleid von *Falco concolor*. *J. Orn.* 96 : 122-123.

— 1968. Der Eingriff der Eleonorenfalken in der herbstliche Vogelzug. *J. Orn.* 109 : 472–474.

Ticehurst, C. B. 1927. The birds of British Baluchistan. *J. Bombay Nat. Hist. Soc.* 32 : 71.

Tregenza, L. A. 1958. Observations on the birds of the S.E. desert of Egypt. *Zool. Soc. Egypt Bull.* 11 : 1–18.

Vaurie, C. 1965. *The birds of the Palearctic fauna*. London: Witherby.

Walter, H. 1968. Zu Abhängigkeit der Eleonorenfalken (*Falco eleonorae*) vom mediterranan Vogelzug. *J. Orn.* 109 : 323–365.

A note on *Sarothrura lugens*

by F. Roux and C. W. Benson

Received 12th December, 1968

Irwin and Benson (1966: 7) indicate that *S. lynesi* Grant and Mackworth-Praed is no more than a subspecies of *S. lugens* (Boehm), the only certain difference being that *lynesi* is the smaller of the two. Much further detail is provided by Keith *et al.* (in press). From the north-west of the known range of the species, in Cameroun, Keith *et al.* were unable to examine any specimen, and relied on the identification by Bannerman (1951: 157) of a female collected at Ngaounyanga, at 8° 48′ N., 13° 33′ E. This specimen is in fact the type of *S. modesta* Monard. The Muséum National d'Histoire Naturelle, Paris, has received an adult female, containing in the ovary "plusieurs follicules bien developpés," collected by Drs. H. J. Garcin and M. Germain 10 kilometres north of Obala on 10th April, 1966, Obala being at 4° 09′ N., 11° 32′ E. This specimen has been compared with the two adult females of *S. l. lynesi* from Nsombo (one of them the type) and one from Ngitwa, north-eastern Zambia, in the British Museum (Natural History), detailed by Benson and Irwin (1966). As these authors state, there is some individual variation, though all three specimens, together with three other females of *lynesi* in the National Museum, Bulawayo, show the same overall characters of colour and colour-pattern, so that they are easily distinguished from females of any other species of *Sarothrura*. Unquestionably the Obala specimen shows these same characters; it has the centres of the feathers of the crown and nape (and sides of the head) markedly chestnut, as in the two from Nsombo, and in the pattern of streaking on the mantle is identical with the Ngitwa specimen. Benson and Irwin note the extent of white on the abdomen as also variable, and as well developed in the Ngitwa specimen, while in the one from Obala it is still more extensive. Nevertheless it is probably only subspecifically separable on size, and not on any other character. Measurements (in millimetres) are as follows:

	Number of specimens	*Wing*	*Tarsus*	*Middle toe with claw*	*Culmen from base*
Obala, Cameroun	1	82	22	27	15
Nsombo and Ngitwa, n.e. Zambia	5	71–74	17–19	24–25	13–14
Inyanga, Rhodesia	1	70	20.5	27	13.5

There is another specimen of nominate *lugens* in Paris from Obala, obtained by the same collectors on 4th December, 1967. It is immature, the plumage mainly uniform blackish, with a dingy white chin, though with some adult female-like feathers appearing, mainly on the chest and wing-coverts. Its measurements are: wing 79, tarsus 20, middle toe with claw 26, culmen from base 13 mm. According to the investigations of Keith *et al.* (in press), of the rate of development of young birds in the genus as a whole, and see also in particular Liversidge (1968), it is probably not much more than six weeks old (from data of hatching), perhaps from an egg laid in late September.

These two specimens from Cameroun were obtained in an islet of savanna, surrounded by the type of equatorial forest which reaches near Obala its northern limit, see Keay *et al.* (1959).

References:

Bannerman, D. A. 1951. *The birds of tropical West Africa*, 8. London.

Benson, C. W. and Irwin, M. P. S. 1966. Lynes' Flufftail, *Sarothrura lynesi*, in Rhodesia. *Arnoldia* (*Rhodesia*), 2 (31).

Irwin, M. P. S. and Benson, C. W. 1966. Notes on the birds of Zambia. Part 2. *Arnoldia* (*Rhodesia*), 2 (37).

Keay, R. W. J. (*Ed.*). 1959. *Vegetation map of Africa*. London.

Keith, G. S., Benson, C. W. and Irwin, M. P. S. In press. The genus *Sarothrura* (class Aves, family Rallidae). *Bull. Amer. Mus. Nat. Hist.*

Liversidge, R. 1968. The first plumage of *Sarothrura rufa*. *Ostrich*, 39 (3): 200.

Zonotrichia albicollis in continental Europe

In vol. 89, no. 1 of your journal Dr. A. Hoogerwerf and Mr. M. J. Tekke recorded the first White-throated Sparrow for the Netherlands. Since they, in the title of their note, ask if the record is the first for continental Europe, I write to inform you that the species has been found at least twice in Fennoscandia. In 1963, on 5th December, one was caught and ringed in Malmö, southern Sweden and in 1967, from 23rd June to 20th July, a single male was singing near the town of Kotka on the southern coast of Finland. Both specimens were photographed.

KAURI MIKKOLA,
P. Rautatiek 13,
Helsinki 10, Finland.

14th March, 1969.

References:

Christiansson, S. and Gerell, R. 1966. Vithalsad sparv (*Zonotrichia albicollis*) ny art för Sverige. *Var Fagelvärld* 25, 1–4.

Hoogerwerf, A. and Tekke, M. J. 1969. The White-throated Sparrow in the Netherlands—the first record for continental Europe? *Bull. Brit. Orn. Cl.*, 89 : 1 : 9–10.

Kanerva, J. 1967. The White-throated Sparrow (*Zonotrichia albicollis*) seen for the first time in Finland (in Finnish with an English summary). *Ornis Fennica* 44, 108–109.

A Northern Pintail x Chiloe Wigeon hybrid

by Bryan L. Sage

Received 23rd October, 1968

Hybrids between the Northern Pintail *Anas a. acuta* L. and the Chiloe Wigeon *Anas sibilatrix* Poeppig do not appear to be of very frequent occurrence. Annie P. Gray (1958) states that "Presumed hybrids have been reported". This statement is no doubt based on the records listed by Hopkinson (1935a & b) and Rothschild (1929). The latter record refers to a female hybrid. So far as I have been able to ascertain no descriptions of the plumage characters of either sex of these hybrids have been published.

The present paper describes a male hybrid from a drake Northern Pintail mated to a Chiloe Wigeon and prepared as a study skin in December 1964 when it was in full adult plumage. The specimen is now in the writer's collection together with a female of the same parentage. It is hoped to describe this female and that listed by Rothschild (*op. cit.*) in a later paper. Due to the widely differing geographical distribution of these two species there is no question of hybrids occurring in the wild. Nevertheless, intrageneric hybrids of this type, even though obtainable only under conditions of captivity, are worth study as they often exhibit characters of phylogenetic interest.

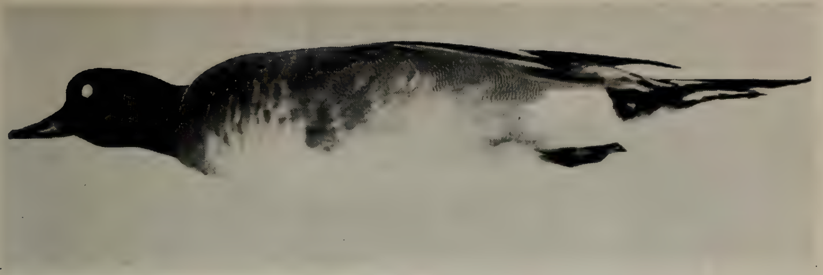
The plumage characters, measurements and colours of soft parts of the hybrid and the parental species of equivalent sex are shown below:

Plumage characters and measurements of Northern Pintail x Chiloe Wigeon male and parental species

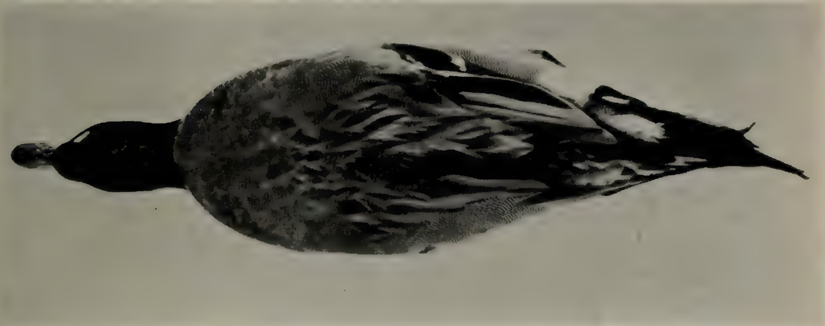
	Pintail	*hybrid*	*Chiloe Wigeon*
Head	Crown and nape dark black-brown with greenish and purple metallic reflections on nape; cheeks, chin, throat and sides of neck deep brown; broad white band from hind crown down each side of nape to breast.	Dark blackish-brown with marked broad metallic-green stripe from eyes to nape; faint purplish sheen on sides of neck and head.	Palish brown with forehead, lores and face whitish; narrow post-ocular greenish stripe.

	Pintail	*hybrid*	*Chiloe Wigeon*
Underparts	Breast and belly white; lower belly and vent white finely freckled with dusky-grey; sides of breast and flanks vermiculated blackish and white.	White; upper breast and sides of breast pale mars brown (R.111/13); flanks vermiculated black and white.	Breast to sides white barred with dark brown; flanks suffused bright russet (R.111/16); remainder white.
Tail	Central rectrices black; next pair with black outer and grey inner webs; remainder with outer webs blackish-grey and inner paler grey-brown; outer feathers edged buff or white on outer webs; under tail-coverts black, longer ones bordered white; upper tail-coverts greyish with buff edging, outermost with black outer webs.	Black, outer feathers with pale edgings; upper tail-coverts vermiculated black and greyish-white; sides of body at base of tail and under tail-coverts, white.	Dark brown, outer feathers paler brown; upper tail-coverts whitish with traces of dark brown bars and russet suffusion; under tail-coverts white and russet.
Wing	Primaries sepia, paler on inner webs; secondaries sepia with broad whitish tips, outer feathers of speculum with outer webs metallic green; innermost feathers greyish; feathers bordering speculum with inner webs sepia and outer webs black.	Primaries medium-brown; median and greater wing-coverts pale grey; speculum black with green gloss, bordered above and below with cinnamon.	Primaries and secondaries medium-brown; median and greater coverts mainly whitish; speculum black with green gloss; tertiaries black bordered whitish, and iridescent.
Back and mantle	Mantle and upper scapulars finely vermiculated blackish-grey and white; rest of scapulars more coarsely vermiculated black and buff; long scapulars blackish bordered greyish; back and rump mouse-grey with some pale buffy freckling; cream patch at sides of rump.	Much as Pintail; pale russet colour of upper breast extending on to sides of mantle; feathers of back darkish brown with paler edges; rump finely vermiculated brown and grey; long scapulars dark grey-brown with paler edge to outer webs; whitish patch at sides of rump.	Blackish-brown to medium brown; feathers of mantle narrowly barred or edged white or buffish; back plain brown.
Bill	Blue-grey with black band on culmen.	Blue-grey, black along ridge of culmen; nail and forward half of cutting edge also black.	Slate-blue with black tip.
Culmen	48–59 mm.	44 mm.	34–35 mm.
Legs and feet	Grey	Pale blue-grey.	Grey
Irides	Brown	Dark red-brown.	Brown
Wing	254–287 mm.	282 mm.	255–275 mm.

Note: Figures in parentheses refer to colour plates in Ridgway's *Nomenclature of Colors for Naturalists*, 1886.



Northern Pintail x Chiloe Wigeon, male showing vermiculated flanks and suffusion of colour on upper breast which extends on to mantle.



Dorsal view of hybrid showing well developed scapulars and tail feathers, and vermiculations of mantle and back.

From the above details it can be seen that all the characters of the hybrid can be found in the males of the parental species. In fact the hybrid can be said to be intermediate between the parental species with perhaps slightly more Pintail than Chiloe Wigeon characters. The white face of the Chiloe Wigeon has gone, as have the breast vermiculations of that species. The bright russet colour of the flanks of the Chiloe Wigeon are replaced by black and grey vermiculations, but this colour, reduced to pale russet (mars brown of Ridgway), occurs on the upper breast, sides of breast and upper mantle of the hybrid. The metallic green stripes from eyes to nape that are characteristic of the Chiloe Wigeon are present and unchanged in the hybrid. The most noticeable Pintail characters are the well developed scapulars and tail feathers, and the vermiculations on the flanks and dorsal surface. In measurements the hybrid is much closer to the Pintail than to the Chiloe Wigeon. There are no characters in the morphology of the hybrid than can be said to be of phylogenetic significance.

References:

Gray, Annie P. 1958. *Bird Hybrids*, Farnham Royal.

Hopkinson, E. 1935a. "Duck hybrids." *Avicult. Mag.* 4th Ser., 13: 78–86.

— 1935b. "Duck-breeding records. Summary of records to date." *Ibid.* 4th Ser., 13: 280–286.

Rothschild, Lord. 1929. "Exhibition of a large series of hybrid ducks." *Bull. Brit. Orn. Cl.*, 49: 93–97.

The altitude of a migrating Shoveler

by Jeffery Harrison

Received 11th February, 1969

On 3rd October, 1968 a bird strike occurred with a Transglobe Airways Britannia aircraft, while flying at 13,000 feet on a journey from Bombay to Bangkok. Parts of the bird were subsequently recovered from the engine and were sent from the Board of Trade (Civil Aviation) to the Infestation Control Laboratory of the Ministry of Agriculture, Fisheries and Food for identification. From parts of one wing, Mr. C. A. Swan was able to identify the bird as a duck and sent the pieces to me for further examination. Part of the speculum, all the tertials and some wing-coverts were comparatively clean and unburnt and from these it was possible to make a definite identification of the bird as a Shoveler, *Anas clypeata* Linnaeus. It was a female and the tertials were typical of an adult with their rounded tips, broadly edged with pale buff, while the blue wing-coverts lacked any of the buffish margins of the juvenile's plumage.

Unfortunately by the time the remains reached me, Transglobe Airways had gone into liquidation, so that the exact spot where the bird strike occurred is not known, but it is reasonable to presume that the bird was on migration to its winter quarters, which include the whole of the Indian subcontinent and Siam (Thailand).

Both Lack (1960) and Eastwood (1967) have discussed the height of bird migration in the light of recent radar studies. Basically it is unusual for migrants to occur much above 10,000 feet and the majority appear to fly below 5,000 feet. However, there are a few records at over 20,000 feet. Positive identifications are not possible by radar, except into broad categories such as passerines, waders, etc. Ducks do not appear to be particularly prone to high flying according to Dr. G. V. T. Matthews, so this record of the Shoveler is of considerable interest. Bergman and Donner (1964) have shown that the Common Scoter and Long-tailed Duck fly at higher altitudes over the land part of their migratory routes than over the sea, overland altitudes of up to 5,000 feet being recorded, averaging 3,400 feet.

I am grateful to Mr. C. A. Swan for bringing this interesting record to my notice, to the Board of Trade for permission to publish it and to Dr. G. V. T. Matthews for his expert help in this field.

References:

Bergman, G. and Donner, K. O. 1964. An analysis of the spring migration of the Common Scoter and Long-tailed Duck in Southern Finland. *Acta Zool. Fenn.*, 105 : 5–39.

Eastwood, Eric 1967. *Radar Ornithology*, London.

Lack, David 1960. The height of bird migration. *British Birds*, LIII : 5–10.

Barred Warbler *Sylvia nisoria* (Bechstein) at Lake Chad

by R. J. Dowsett

Received 12th November, 1968

At about 07.00 hrs on 17th October, 1968, I saw a large grey, heavy-billed *Sylvia*-type warbler in a *Salvadora persica* bush at Malam'fatori on the Nigerian shore of Lake Chad (13° 37′ N., 13° 20′ E.). Realising that it was either a Barred Warbler *Sylvia nisoria* or an Olive-tree Warbler *Hippolais olivetorum*

(Strickland), neither known from West Africa, I chased it into a nearby mist-net. In the hand it was clearly a first-year *S. nisoria*, and the specimen is now in the Zoology Museum of the University of Ibadan, Nigeria.

The bird was a male, with traces of body fat. It weighed 21.3 gms. at 07.30 hrs.; Williamson (1964, *Identification for Ringers*, 3: The Genus *Sylvia*. Brit. Trust Orn.) gives weights of 50 first-year autumn passage migrants in Scotland ranging from 18.8 to 31.0 gms., most between 20 and 25 gms. It had wing and bill lengths of 87 and 17.5 mm. respectively. Apart from primary 3 (ascending numbering) in the left wing being only two-thirds grown—presumably through an accident—the bird was in worn plumage with no trace of body moult.

This bird occurred at Malam'fatori after six days of exceptionally strong north-easterly winds, which abated only slightly during the afternoons and which might have blown the bird off course. *S. nisoria* migrates south-eastwards in autumn, from Europe to winter in south Arabia and north-east Africa (Williamson, *op. cit.*). The only records from north Africa are two specimens from Bahig, Egypt (55 kms. west-south-west of Alexandria)—one a very light, though "moderately fat", spring bird of 13.0 gms. (Hubbard and Seymour, 1968, *Ibis:* 576). South of the Sahara it is apparently unknown west of the Nile at about 12° N., 33° E. (Cave and MacDonald, 1954, *Birds of the Sudan*). It is unrecorded from north Africa west of Egypt, and south of the Sahara is apparently hitherto unrecorded west of the Sudan (Moreau, 1961, *Ibis:* 416, 588). However, birds from western breeding populations and those that occur regularly on passage in western Europe may well occur regularly as far west as Lake Chad. The occurrence of several east Africa-wintering species at Malam'fatori in autumn 1968—for example Greater Sandplover *Charadrius leschenaultii* Lesson, Broad-billed Sandpiper *Limicola falcinellus* (Pontopp.) and Terek Sandpiper *Xenus cinereus* (Güld.)—lends support to this idea.

ACKNOWLEDGMENTS

I am grateful to Mr. C. W. Benson for assistance with references. My work at Lake Chad was partly supported by grants from the British Ornithologists' Union (Research and Special Publications Fund) and Nigerian Ornithologists' Society (through Mr. R. E. Sharland), for which I am grateful.

Greater Sandplovers *Charadrius leschenaultii* Lesson at Lake Chad

by R. J. Dowsett

Received 12th November, 1968

On 2nd August, 1968, I shot a Greater Sandplover *Charadrius leschenaultii* on a sand beach on the Nigerian shore of Lake Chad at Malam'fatori (13° 37′ N., 13° 20′ E.). In the field it was a sandy coloured "sandplover", with a heavy dark bill, standing head and shoulders over associated Kittlitz's Sandplovers *C. pecuarius* Temminck and White-fronted Sandplovers *C. marginatus* Vieillot. It was extremely wild and I was unable to confirm in the field that it was *leschenaultii* rather than the similar Mongolian Sandplover *C. mongolus* Wagler. C. W. Benson of the University Museum, Department of Zoology, Cambridge and P. R. Colston of the Bird Room, British Museum (Natural History) compared the skin to series of *leschenaultii*, *mongolus* and the Caspian Plover

C. asiaticus Pallas, and concluded that it was undoubtedly *leschenaultii*. The specimen is now in the collection of the British Museum (Natural History).

Then on 21st August, 1968, R. H. Parker and I collected a second *C. leschenaultii* in the same place. It was alone, on an open sand beach. Identification of the specimen has been confirmed by R. Wagstaffe of Liverpool Museum. The specimen is now in the collection of the Zoology Museum, University of Ibadan, Nigeria.

The first bird was immature, in active body moult but with fresh remiges and rectrices. It weighed 77.5 gms. and had a wing length of 134 mm. (maximum chord). The second was a female with all but the outer three primaries and central pair of rectrices new, and no body moult. It had a good deal of body fat and weighed 82.5 gms., with wing of 139 mm.

These are the first records of the species from West Africa. It breeds in the eastern Palaearctic, and has been recorded throughout the year on the coasts of Egypt and eastern Libya, though with no proof of breeding (Etchécopar and Hüe, 1967, *Bds. of North Africa:* 215). It winters on coastal mud flats from the Red Sea to South and South-West Africa. It is quite common on islands off the east coast of Africa, particularly Malagasy, Aldabra and the Comoros (Benson, 1967, *Atoll Research Bull.* 118: 89). There are very few records of this species inland in Africa, and this is the first evidence of a trans-Saharan migration (Moreau, 1967, *Ibis:* 243).

ACKNOWLEDGMENTS

I should like to thank Messrs. C. W. Benson, P. R. Colston, R. H. Parker and R. Wagstaffe for critical examination of these specimens. My work at Lake Chad was partly supported by grants from the British Ornithologists' Union (Research and Special Publications Fund) and Nigerian Ornithologists' Society (through Mr. R. E. Sharland), for which I am grateful.

Isabelline Curlews and Turnstone in Eire

by Jeffery Harrison

Received 9th January, 1969

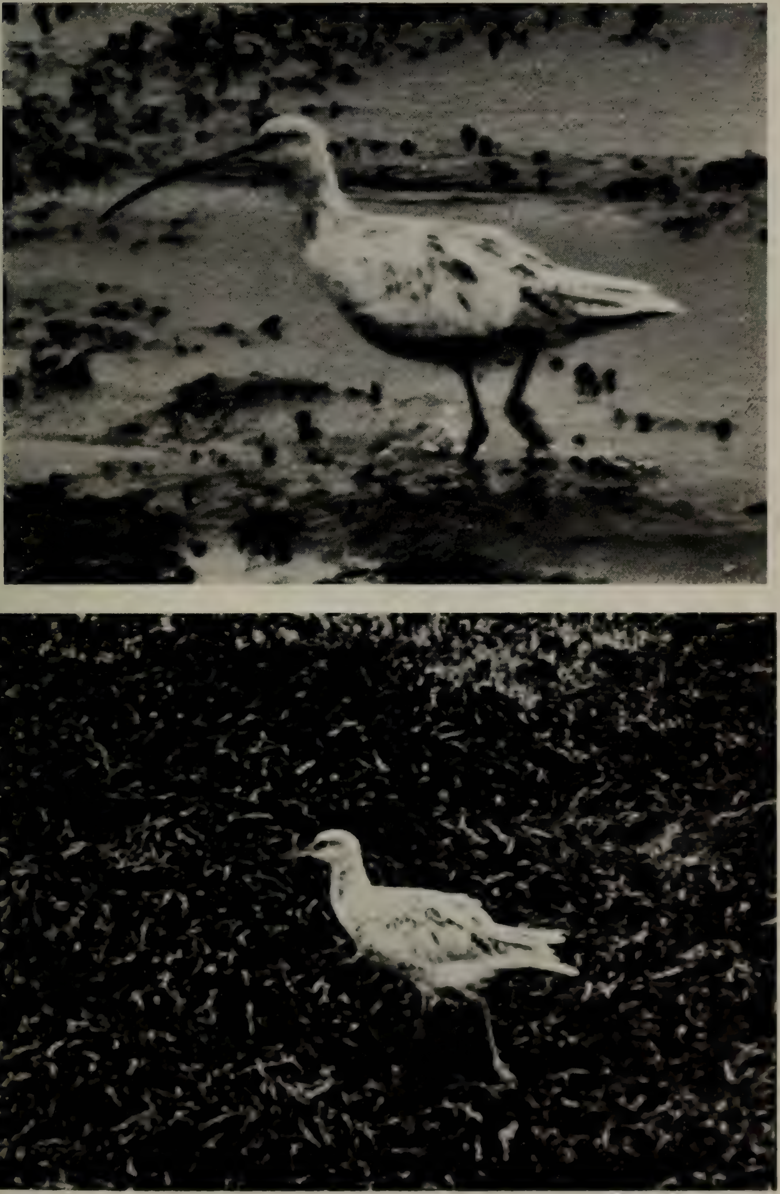
In view of the fact that records of albinism are comparatively rare in wading birds, three recent examples would seem worthy of recording.

Two of these concern the Curlew *Numenius arquata arquata*, both being seen on the shore close to Timoleague, Co. Cork, Eire, between 28th–30th September, 1968. These were virtually identical, being very pale, isabelline varieties, so pale as to look almost white, except for the primaries which were pale chestnut-brown. There was a slightly darker line through the eye, while some of the mantle feathers, wing-coverts and long tertials showed dark centres. The iris of one which was best seen (a female by its long bill) was a normal brown, the beak a paler brown than normal and the legs a pale pinkish-grey.

Although it seemed possible that the two were related, they did not go about together and were in fact only once seen together, when they crossed, flying in opposite directions. At low tide the female could always be found within a hundred yards along the same stretch of shoreline, in spite of having some ten miles of equally suitable shore to choose from, with other Curlews feeding all along it. It was thus rather interesting to note how restricted were the feeding grounds of this particular bird.

Mr. Bryan Sage has kindly allowed me to see his card index with reference to albinism in the Curlew, of which he has 26 records. These can be divided into three groups:—

(*a*) White or off-white primaries, otherwise normal (3).
(*b*) Isabelline (11). All those showing any trace of pattern.
(*c*) White (12).



Photos: Pamela Harrison

Isabelline Curlew seen near Timoleague, Co. Cork, Eire.

One rather curious feature of these records is that of the twelve records of white Curlews, no fewer than nine were recorded between 1856–1924, the other three occurring in 1948, 1949 and 1955 respectively, whereas eight of the eleven isabelline birds were recorded from 1947 to date, the other three being in 1856, 1924 and 1925 respectively.

This might have been thought to be due to more accurate recording in recent years, but the early records specifically refer to pure white birds and four of them were shot and preserved.

One of the two isabelline Curlews now recorded, the bird thought to be a female, was photographed by Dr. Pamela Harrison and is reproduced here.

An isabelline Turnstone *Arenaria interpres* was found with a flock of 200 normally coloured ones on the shore close to Akeragh Lough, Ballyheigue, Co. Kerry on 7th October, 1968, and again two days later. This bird showed a ghost pattern of pale grey and buff on the breast, upperparts, head and neck, wings and tail, the white being normal.

Sage has only three records; a white bird with grey head and shoulders seen in the Scilly Isles in 1953; another white one with some brown on the neck and tail at Milford Haven in 1956 and a third with the merest trace of pigment on the breast and in lines on the wing at Par, Cornwall, in 1962.

ACKNOWLEDGMENTS

I am most grateful to Bryan Sage for allowing me access to his card index collection of references and to Dr. Pamela Harrison for the photographs.

A Corn-crake, *Crex crex L.*, trapped in Kumasi, Ghana

by Anders G. Dahm

Received 20th October, 1968

In February, 1966, Mr. Philip E. Mensah—Technical Assistant, Department of Zoology, Univ. Sci. Tech., Kumasi (Ghana), asked me to identify a bird which he had trapped together with some local African birds. I recognised it as a Corn-crake, *Crex crex*, and this was confirmed at the British Museum (Natural History) as well as by Dr. Gustaf Rudebeck, Curator of the Zoology Museum, University of Lund (Sweden).

The specimen which is in the Museum collections of the Department of Zoology at the University of Science and Technology, Kumasi, was trapped in a marshy area in the early morning on 13th February, 1966, on the University Campus. It was a female with "well though not fully developed sex organs" according to the collector's notes. The plumage was in good condition, the crop contained some insect remains and the body weight was 100 grams. The wing length was 132 mm.; bill 19 mm.; tarsus 41 mm.; and tail 52 mm.

As far as I have been able to determine this specimen appears to be the first recorded from Ghana. The list of finds or observations of the Corn-crake in West Africa is a short one as, according to Moreau (1961), "in Africa nearly all the wintering records are in the east, from the Sudan to the Cape. In the western Sudan (Darfur) Lynes did not find it, but there are records much further west, namely, singles in Cameroons and Nigeria." For Nigeria Elgood, Sharland and Ward (1966) add to an earlier record on 5th April, 1929, at Oyo, a province in the Western Region (reported by Bannerman, 1953) a specimen shot on 8th April, 1960, at Calabar, Eastern Nigeria.

Bannerman (op. cit.) also mentioned a Corn-crake collected at Lolodorf in Cameroun in December, 1927, while the specimen also mentioned by Bannerman recovered in the Congo and ringed in Denmark must refer to that reported by Jägerskiöld in 1930 (see also Brehm-Ekman, 1943). The latter bird was originally ringed on 11th July, 1929, in central Sweden (province of Västmanland) and trapped 25th November, 1929, in the southern former Belgian Congo—at a village named Ngoia Bukoko between Kabinda and Kandakanda. There exist no official notes of the Corn-crake reported as ringed in Denmark while the only other record of one ringed in Sweden and recovered outside the country is that ringed in July, 1962 and killed in March, 1964, in the Vinnitsa Region, U.S.S.R.

To the above records of *Crex crex* must be added one found (by Malbrant) at Brazzaville, Republic of Congo in January, 1930 (see Bouet, 1955). Finally, in a Swedish edition of Brehm's *Tierleben* (1926) Rendahl stated that he once made an observation of Corn-crake "in the deep forest of Central Africa between lat. 11 and 13."

Thus, though there are quite a number of records or observations of Corn-crakes in north-eastern, eastern and throughout South Africa to the Cape (*e.g.* Bouet, 1955; Mackworth-Praed and Grant, 1962; Meinertzhagen, 1954; Reichenow, 1900–1901), the situation appears quite different for West Africa, including the western part of Central Africa. The first record from West Africa dates back to 1927 and during the following 40 years apparently four more records have been added from western tropical Africa. (The total of five includes the specimen from Brazzaville but not the bird trapped between Kabinda and Kandakanda in former Belgian Congo.) In two fairly recent papers on the birds of eastern Nigeria (by Serle, 1957) and of Ghana (by Lamm and Horwood, 1958) no additional finds are mentioned.

It is impossible to assess why there are so few records of Corn-crakes in West Africa compared with the numbers recorded from the wintering quarters throughout all eastern Africa from the north to the Cape and Malagasy, but it might be due to the smaller number of ornithologists in this area, and the sporadic records in West Africa may not accurately reflect the overwintering distribution of the species. Since the first was reported from West Africa, the distribution of the Corn-crake in its breeding areas of the Palaearctic has changed drastically, in part at least as a response to changing agricultural practices (Moreau, 1961, and Ulfstrand, 1961). However there occur certain fluctuations in the local European populations and in occasional years they can show a (temporary) increase, though there has been a general decrease in total numbers of birds (Enemar, 1957).

This record from Ghana might represent a specimen from the west European populations that could be expected to move to or pass through sites on the western side of Africa. The bird is so far the most western record in West Africa and will support earlier suggestions that although the majority of Corn-crakes from Europe wintering in Africa pass to the east of Sahara, birds from the western Europe might reach their wintering localities along a western route. It is at present unknown if the birds return to the country from where they originally came or if they exhibit only weak or no "Ortstreue" which could explain the annual changes in the populations in certain breeding areas studied (Enemar, 1957, p. 279).

As far as is known, the few records of Corn-crake in West Africa have all been made during the dry season. It is impossible to say if this is coincidental or whether the birds are only to be found in West Africa during these months, perhaps en route to or from the breeding localities and the wintering area.

References:

Bannerman, D. A. 1953. *The birds of West and Equatorial Africa*, Vol. I. Oliver & Boyd.
Bouet, G. 1955. Oiseaux de l'Afrique tropicale (première partie). *Faune de l' Union Francaise* (Ancienne faune de l'Empire Francais), XVI. Paris.
Brehm. *Djurens Liv;* 4th edit. in Swedish translation. Stockholm, 1926.
Brehm-Ekman. *Djurens Liv;* 5th edit. Fåglarna: andra delen. Stockholm, 1943.
Elgood, J. H., Sharland, R. E. and Ward, P. 1966. Palaearctic Migrants of Nigeria. *Ibis*, vol. 108, no. 1.
Enemar, A. 1957. Gräshoppsångare (*Locustella naevia*) och kornknarr (*Crex crex*) i Sverige år 1957. Vår Fågelvärld, Årg. 16, no. 4.
Jägerskiöld, L. A. 1930. Några utdrag ur Göteborgs Biologiska Förenings liggare över fågelmärkningar. *Fauna och Flora*, 1930.
Lamm, D. W., and Horwood, M. T. 1958. Species recently added to the list of Ghana Birds. *Ibis*, vol. 100, no. 2.
Mackworth-Praed, C. W. and Grant, C. H. B. 1962. Birds of the Southern Third of Africa, Vol. 1. *African Handbook of Birds*, Series II, vol. I.
Meinertzhagen, R. 1954. *Birds of Arabia.*
Moreau, R. E. 1961. Problems of Mediterranean-Saharan migration. *Ibis*, vol. 103 a, no. 3.
Reichenow, A. 1900–1901. *Die Vögel Afrikas*. Bd. 1. Neudamm.
Serle, W. 1957. A Contribution to the Ornithology of the Eastern Region of Nigeria. *Ibis*, vol. 99, no .3.
Ulfstrand, S. 1961. Fåglar 2. in *Djurens Värld*, edit. by B. Hanström, Malmö.

Age characters in swifts

by R. K. Brooke

Received 21st November, 1968

In the study of any zoological group the discrimination of age classes is obviously of great importance in obtaining maximum information from collected specimens and, where such classes are sufficiently distinctive, in field studies. Studies in the swifts have often been less efficient than they might have been because of the poverty of known characters for distinguishing age classes in most species. This is in part the reason why it is seldom appreciated that swifts do not usually breed till their second year. This communication deals with age characters of birds in the hand and, even so, is not the last word on the subject: it is, rather, a guide to future studies. Only in the treeswifts *Hemiprocne* are the juvenals readily distinguishable by their chestnut and white barred plumage with down attached in the early stages. In *Collocalia*, once a young bird has achieved its full size, *i.e.* normal wing length, there is no means of separating it from an adult either by colour or measurement or skull ossification since this is not always complete even in breeding birds (Vincent 1934, Johnston 1958). Juvenal characters for *Cypseloides rutilus* (Vieillot) are given in Collins (1968), for *C. lemosi* by the describers (Eisenmann and Lehmann 1962) and for *C. niger* (Gmelin) in Bent (1940). Series of most other members of this genus (*sensu* Peters 1940) are still inadequate for a study of this type. In *Apus* it is generally said that white edges to the feathers are a sign of immaturity but this is only true of certain feathers as will be explained below. De Roo (1966) has shown how an examination of primary wing feathers in *A. a. apus* (L.) can be used for aging that form. Nothing more will be said on this subject except to remark that his findings apply to nearly all species and races (*A. acuticauda* (Jerdon), *A. aequatorialis gelidus* Brooke and *A. affinis bannermani* Hartert are among the exceptions) in *Apus* and *Cypsiurus*. Mackworth-Praed and Grant (1952) indicate how age classes may be told in *C. parvus* (Lichtenstein) and their remarks are true as far as they go. While holding a Frank M. Chapman Memorial grant from the American Museum of Natural History I have recently been able to examine a large number of specimens and attention was given to this problem as a subsidiary aspect of a study of the classification and distribution of African swifts.

In most fork-tailed swifts the fifth or outermost rectrix is more pointed or attenuated or emarginate on its inner web in the adult than in the juvenal. In some species the difference is slight and it is only possible to separate juvenals (including nestlings) from birds which are older but not necessarily adult. In others the difference is sufficiently great to enable the intermediate or subadult or immature class to be recognised by the intermediate shape of the fifth rectrix. It must be appreciated that in the species to be discussed the nestling and juvenal fifth rectrix has a rounded end that is not pointed to any significant degree. After the first moult of the rectrices a more pointed fifth rectrix appears. The effect is achieved chiefly by reduction of the web on the inner side of the rectrix. In some species there is no further development of the shape of the fifth rectrix, but in those with markedly forked tails it is the second moult which produces the elongated and emarginate fifth rectrix which gives the characteristic shape to the adult tail. In the following species it is only possible to separate juvenals and non-juvenals:

Apus aequatorialis (von Müller), *A. apus* (L), *A. niansae* (Reichenow), *A. alexandri* (Hartert), *A. bradfieldi* (Roberts), *A. barbatus* (Sclater), *A. berliozi* Ripley, *A. pallidus* (Shelley), *A. pacificus* (Latham), *A. horus* (Heuglin), *Tachornis phoenicobia* Gosse, *T. squamata* (Cassin), *Cypsiurus batasiensis* (Gray) and *Cypseloides niger* (Bent 1940). In the following species it is possible to separate juvenals, immatures and adults:

Apus caffer (Lichtenstein), *A. melba* (L.), *A. acuticauda* (Jerdon) (Brooke in press), *Schoutedenapus myioptilus* (Salvadori) and *Cypsiurus parvus* (but see discussion of *C. p. gracilis* [Sharpe] below). There is a slight trace of this emargination in *Aeronautes* but while it can be seen in a series it is so slight that it cannot be described in words and it is therefore of doubtful value as an age character in that genus. *Panyptila* and *Tachornis furcata* (Sutton) may be exceptions: I have not seen enough material to determine whether there is any development at all in the shape of the fifth rectrix though it may occur in the fourth rectrix of *Panyptila*. In *Streptoprocne* abrasion of the rectrices is so rapid that a study of this type seems doomed to frustration.

In *Cypsiurus parvus* (not *C. batasiensis* which is a separate species [Brooke in prep.]) the nestlings and juvenals have unstreaked throats and chestnut tips to the feathers, particularly on the upperparts and under tail-coverts. In *C. p. brachypterus* (Reichenow) the chestnut tips on the underparts are not well developed and abrade before the nestling flies. In immature birds the streaking on the throat may or may not be present and this class cannot be distinguished by the presence or absence of this character but only by the intermediate shape and length of the tail (measurements in Brooke in prep.—roughly speaking where the fifth rectrix exceeds the fourth by more than 2 cm. the bird is adult and where it exceeds it by 1 cm. or less it is juvenal) coupled with the absence of chestnut tipping. Adults may be told not only by their greatly elongated, emarginate fifth rectrices but also by their possession of a streaked throat and, obviously, by having no trace of chestnut tipping in the plumage. It should be noted that the juvenal of *C. p. gracilis* in Malagasy has a fifth rectrix like that of immatures of African races of *C. parvus* and a streaky throat and that therefore it is not possible to distinguish an immature stage of this form since the first moult produces an adult rectrix. The same may be true of *C. p. griveaudi* Benson of the Comoro islands which I have not seen but which is said by its describer (Benson 1960) to be very close to *C. p. gracilis*. In *C. batasiensis* the chestnut tipping in juvenals is replaced by off-white and throat streaking is a rare individual aberration. The first moult produces an adult type rectrix.

It has long been held that white edges to the feathers are a sign of juvenility in a swift: this is too broad a statement. Fresh feathers in many tracts have slight pale edges even in birds which are fully adult. However broad pale edges to the feathers of the crown are only found in juvenals in *Apus:* it is particularly marked in *A. apus* which has the most distinctively marked juvenal in the genus. Similarly, pale edges to the tail feathers and the four outermost primaries are only found in juvenals of *Apus*, *Cypsiurus*, *Nephoecaetes* and *Streptoprocne*. In *Chaetura* likewise the four outermost primaries only are tipped or edged with white in the juvenal but not in the adult after moulting. It is still possible to tell that in adults these primaries are fresh by their correspondence in colour with the inner primaries which are pale edged and by their possessing a greenish wash or gloss which with wear turns dark bluish-purple in dark forms and dull brownish in pale forms.

Pale toes are found in nestlings and newly fledged juvenals in most, perhaps all, genera: these become dark shortly after leaving the nest. Individual nestlings may have toes substantially darker than average but possession of pale toes is a property of birds in or only just out of the nest, pathological conditions excepted.

In *Hirundapus* juvenals have dark tips to the white under tail-coverts which are replaced in the post juvenal moult by pure white feathers. In *H. caudacutus caudacutus* (Latham) the juvenal has a grey-brown, slightly barred throat and grey-brown loral patches whereas these areas are creamy white in immature and adult birds. Likewise in *H. giganteus indicus* (Hume) the loral patches are grey-brown in juvenals and creamy white thereafter.

In *A. affinis* the nestlings always have unstreaked throats even in those races such as *bannermani* in which all adults have dark streaks on the throat. However in most races some birds marked as being in full breeding condition have unstreaked throats and no *A. a. galilejensis* (Antinori) have streaked throats. The nature of this character needs further investigation before it can be used to age fully grown birds.

ACKNOWLEDGMENTS

As stated above, the work on which this paper is based was undertaken while holding a Frank M. Chapman Memorial grant. I am obliged to Dr. Charles T. Collins for criticizing the first draft of this paper. I am obliged to the authorities of the following museums for access to their collections and for facilities for study:

National Museum of Rhodesia, Bulawayo, Rhodesia.
Transvaal Museum, Pretoria, S. Africa.
Zoologisches Museum Alexander Koenig, Bonn, Germany.
Koninklijk Museum voor Midden-Afrika, Tervuren, Belgium.
Museum of Comparative Zoology, Cambridge, Mass.
Peabody Museum of Natural History, New Haven, Conn.
Academy of Sciences, Philadelphia, Pa.
U.S. National Museum, Washington, D.C.
University Museum of Natural Science, Baton Rouge, La.
County Museum of Natural History, Los Angeles, Calif.
Field Museum of Natural History, Chicago.
American Museum of Natural History, New York, N.Y.
Carnegie Museum, Pittsburgh, Pa.
University Museum of Zoology, Princeton, N.J.

References:

Benson, C. W. 1960. The birds of the Comoro Islands: results of the British Ornithologists' Union Centenary expedition 1958. *Ibis*, 103B: 5–106.

Bent, A. C. 1940. Life histories of North American Cuckoos, Goatsuckers, Hummingbirds and their allies. *U.S. Nat. Mus. Bull.*, 176: 254–271.

Brooke, R. K. In press. Taxonomic and distributional notes on *Apus acuticauda*. *Bull. Brit. Orn. Cl.*

Collins, C. T. 1968. The comparative biology of two species of swifts in Trinidad, West Indies. *Bull. Florida State Mus.* 11: 5: 257–320.

De Roo, A. 1966. Age characteristics in adult and subadult swifts *Apus a. apus* (L.) based on interrupted and delayed wing-moult. *Gerfaut* 56: 113–134.

Eisenmann, E. and Lehmann, F. C. 1962. A new species of swift of the genus *Cypseloides* from Colombia. *Am. Mus. Novit.*, 2117: 1–16.

Johnston, D. W. 1958. Sex and age characters and salivary glands of the Chimney Swift. *Condor* 60: 73–84.

Lack, D. 1956. A review of the genera and nesting habits of swifts. *Auk*, 73: 1: 1–32.

Mackworth-Praed, C. W. and Grant, C. H. B. 1952. *Birds of eastern and north-eastern Africa*, I. Longmans, Green & Co., London.

Peters, J. L. 1940. *Check-list of the birds of the world*. IV. Harvard University Press, Cambridge, Mass.

Vincent, J. 1934. The birds of northern Portuguese East Africa. Comprising a list of, and observations on, the collections made during the British Museum Expedition of 1931–32. V. *Ibis*, 13: IV: 4: 757–799.

An undescribed subspecies of Hepatic Tanager *Piranga flava* from Colombia

by Kenneth C. Parkes

Received 14th January, 1969

The Hepatic Tanager *Piranga flava* (Vieillot) has the largest breeding range of any member of the Thraupinae, from south-western United States to Argentina. In Colombia it has been reported only from the western Andes and adjacent Cauca Valley (*desidiosa* Bangs and Noble), the interior of Nariño in the south-westernmost corner of the country (*lutea* [Lesson]), and the Santa Marta Mountains of the north-eastern corner of the country (*faceta* Bangs). The species has not previously been reported from anywhere in the eastern Andes of Colombia.

In 1916, the late M. A. Carriker, Jr., collected a series of six Hepatic Tanagers at El Cauca, Magdalena, on the western slope of the Eastern Andes. Carriker (1955:55) described this locality as "a finca [= farm] . . . on the trail from Loma Corredor to Ocaña," and Meyer de Schauensee (1948: 292) gives its altitude as 900 metres. When W. E. Clyde Todd, then Curator of Birds (and now Curator Emeritus) at Carnegie Museum catalogued these specimens, he assigned them to *faceta*, the subspecies of the Santa Marta Mountains and the coastal ranges of Venezuela. Later, however, he wrote on his file card for *faceta:* "On re-examination I find that the three males from El Cauca . . . show a red of a different shade from either *faceta* or *desidiosa*, and probably represent still another form." He did not pursue the matter further, however, and this range extension for the species was never published. Zimmer's monograph (1929) of the species is flawed by the author's failure to assemble all possible material; in the case of *faceta*, described from the Santa Marta Mountains of Colombia, he based his remarks entirely upon three males and one female from Venezuela. Had he borrowed the ample Carnegie Museum series, he probably would have noted the characters of the Magdalena birds, and would certainly have added the locality to his map. In any case, in view of Mr. Todd's early recognition that these specimens probably represented a new race, it is most appropriate to call it:

Piranga flava toddi, subsp. nov.

Type: Carnegie Museum no. 54608, male just completing moult into definitive basic plumage, collected at El Cauca, Magdalena ["Santander", error, on label], Colombia (W. slope of E. Andes, 900 metres), 29th July, 1916, by M. A. Carriker, Jr. (collector's no. 17740).

Characters: Of the many subspecies, *toddi* requires comparison only with *P. f. faceta*, its nearest neighbour, from which it does not differ in size. Definitively plumaged (red; see discussion below) males differ from *faceta* in being less scarlet; the underparts range from near Begonia Rose of Ridgway (1912) on the abdomen, darkening anteriorly to near Spectrum Red, whereas in the same areas *faceta* ranges from near Peach Red to dark Scarlet Red. I am unable to match the dorsum to Ridgway colours, but *toddi* is again of a more bluish, less scarlet red. The flanks of *toddi* have more of a grey wash, and the lores are blacker than in *faceta*. The one adult female of *toddi* differs from a good series of *faceta* in being deeper yellow below, almost orange on the throat, with the mid-ventral area contrasting sharply with the very dark flanks as in the Pacific form *desidiosa* (which is altogether darker and duller in both sexes). Dorsally, the female *toddi* is of a richer, yellower green, much deeper yellow on lores and bend of wing than *faceta*, becoming almost orange on the forehead. Two presumed first-year females of *toddi* (colours muted, abdomen whitish) differ similarly from *faceta* of the same age-class.

Range: Known only from the type locality, which is approximately 135 miles south of the southernmost similar elevation in the Santa Marta Mountains.

Specimens examined: The six *toddi* were directly compared with 52 specimens of *faceta* (30 from Santa Marta, 22 from Venezuela). Specimens of all other races admitted by Zimmer (1929) were examined, with the exception of *saira* of south-eastern Brazil, the closely similar *macconnelli* of Guyana and adjacent Brazilian savannas, and *haemalea*, a very dark race of the highlands of Guyana. None of these resembles the *faceta-toddi* group.

Remarks on plumages: The three male specimens are all completing the moult into the definitive red plumage; the specimen selected as the holotype is the farthest advanced. Study of our large series of the adjacent subspecies *faceta* indicates that (all?) males do not attain their definitive red plumage until their third prebasic moult. They can and do breed in the first basic plumage, which is indistinguishable from the female. This is illustrated by CM 37696, Cincinnati, Santa Marta, 8th June, 1911, which, although in female-like plumage, was marked by Carriker as "♂ juv. (*breeding*)" [Carriker, like many older collectors, used "juv." to indicate any young bird, rather than restricting the term to birds wearing juvenal plumage, as is now the custom]. At the next prebasic moult (example CM 42266, Minca, Santa Marta, 18th June, 1913), the green-edged remiges are replaced by red-edged ones, but the incoming ventral plumage may be red mixed with yellowish, or peach-coloured feathers. At this moult some of the incoming dorsal feathers may be quite greenish (example CM 104500, Pie del Cerro, Aragua, Venezuela, 18th May, 1929). At the third prebasic moult, the definitive red plumage is assumed. This is the stage of the three male specimens of *toddi*. The brief discussion by Allen (1891) indicates that *P. f. saira* in Mato Grosso, Brazil, has a similar plumage sequence.

References:

Allen, J. A. 1891. On a collection of birds from Chapada, Matto Grosso, Brazil, made by Mr. Herbert H. Smith. *Bull. Amer. Mus. Nat. Hist.*, 3: 337–380.

Carriker, M. A., Jr. 1955. Notes on the occurrence and distribution of certain species of Colombian birds. *Novedades Colombianas*, 1: 48–64.

Meyer de Schauensee, R. 1948. The birds of the Republic of Colombia. Part I. *Caldasia*, 5: 251–379.

Ridgway, R. 1912. *Color standards* and *color nomenclature.* Privately printed, Washington.

Zimmer, J. T. 1929. A study of the Tooth-billed Red Tanager, *Piranga flava. Field Mus. Nat. Hist. Zool. Ser.*, 17: 169–219.

Two new subspecies of the Red-crowned Ant Tanager *Habia rubica* from Venezuela, with remarks on Colombian populations

by Kenneth C. Parkes

Received 15th February, 1969

Within the highly polytypic species *Habia rubica* (Vieillot), the current literature ascribes the subspecies *H. r. rubra* to Trinidad and the mountains of adjacent Venezuela in the states of Sucre and Monagas. The species has never been reported from Venezuela south of the Orinoco. Carnegie Museum possesses a series of eight specimens of the Red-crowned Ant Tanager taken by the late M. A. Carriker, Jr., at the Río Yuruán, eastern Bolívar, Venezuela. This represents a distinct range extension for the species, which is unknown in the Guianas or in Brazil north of the Amazon. The long-overlooked specimens of the Blue-backed Tanager (*Cyanicterus cyanicterus*), a species typical of the Guianas, from this same Río Yuruán locality (Parkes, in press) suggest that *Habia rubica* may well extend at least to Guyana.

Comparison of this series with other material in Carnegie Museum reveals, as might be expected, that the birds from Bolívar represent an undescribed subspecies. Furthermore, the ascription of the birds of north-eastern Venezuela to *rubra* of Trinidad is incorrect. There are thus two overlooked subspecies of *Habia rubica* in Venezuela. That of the north-eastern mountains may be called:

Habia rubica crissalis, subsp. nov.

Type: Carnegie Museum no. 106889, adult female, collected at Mirasol (3,000 feet), about 15 km. S. of Cumanacoa, Sucre, Venezuela, 23rd December, 1929, by H. J. Clement (collector's no. 379).

Characters: Females nearest *H. r. rubra* of Trinidad, but underparts richer and warmer in colour, especially noticeable on the crissum, which is bright orange-brown rather than dull orange-buff. Abdomen buff rather than whitish as in *rubra*, but paler than in the richly coloured females of *coccinea*, the race found in the Mérida region of western Venezuela. In *coccinea* the underparts are almost uniform rather than distinctly paler on the abdomen than on the breast as in *rubra* and *crissalis*. Adult males have the throat deeper red than *rubra*, resembling *coccinea* in this respect, but have the posterior underparts paler and pinker than *coccinea*, brighter and more scarlet than *rubra*. The abdomen colour is thus intermediate between *coccinea* and *rubra*, but the bright *coccinea*-like throat contrasts more sharply with the posterior underparts than in either of the other two races. Dorsally, males match *coccinea* quite closely. This race thus to some extent represents an intermediate between *coccinea* and *rubra*, with males rather more like *coccinea* and females rather more like *rubra*, but well characterized in both sexes. In view of the geographic isolation of this population, it seems worthy of a name of its own.

Range: As given by Phelps and Phelps, Jr. (1963, *Bol. Soc. Venez. Cienc. Nat.*, 24: 379) for *H. r. rubra* in Venezuela: lower edge of the Subtropical Zone (450–1,200 metres) in the eastern coastal range, from Anzoátegui east to the Paria Peninsula of Sucre. Specimens were examined from Sucre only, but there is no reason to believe that the birds of immediately adjacent Anzoátegui and Monagas would differ.

As mentioned above, the Bolívar series represents the first record for this species from the area between the rivers Orinoco and Amazon. It is appropriate, therefore, to call these birds:

Habia rubica mesopotamia, subsp. nov.

Type: Carnegie Museum no. 33847, adult male, collected at the Rio Yuruán (a tributary of the Río Cuyuni), eastern Bolivar, Venezuela, 1st April, 1910, by M. A. Carriker, Jr. (collector's no. 6900).

Characters: Males paler below than *rubra*, with the abdominal area greyish; under tail-coverts more salmon-pink, less rose-pink; upperparts similar to *rubra*, but dark margins of red crown-patch less well marked or even absent. Bill paler, with upper mandible (both in dried skins and in freshly-taken birds, according to label annotations) brown rather than blackish. The two available females are closely similar to *rubra*, but are of a warmer, less greyish brown above.

Range: Known only from the type locality.

Remarks on Colombian populations: Meyer de Schauensee (1951, *Caldasia*, 5: 1053–1054) listed a single immature male from the upper Sinú Valley in Bolívar, Colombia, as the first record of *Habia rubica* west of the eastern Andes in Colombia. He was unable to identify it subspecifically. Carnegie Museum also has a single specimen from a previously unreported locality in Colombia: El Cauca, Magdalena (900 metres), on the west slope of the Eastern Andes. The subspecies *coccinea* is known only from the eastern slopes of this range. The specimen, an adult male in heavy moult, was collected 29th July, 1916, by Carriker. It is nearest *coccinea* in colour, but is distinctly brighter on the posterior underparts, this area being almost intermediate between *coccinea* and *crissalis*, but purer pinkish-red than either. It almost certainly represents an undescribed subspecies; this is not unexpected, as there is often a distinct subspecies on either slope of the Eastern Andes.

Blake (1962, *Fieldiana:* Zoology, 44: 110) has extended northward to the Sierra de Macarena, eastern Colombia, the range of *H. r. rhodinolaema*. Blake identified his four specimens as *rhodinolaema* partly by a process of elimination and partly on the basis of literature descriptions, not having topotypical material from eastern Ecuador available (Blake, *in litt.*) I have examined the two males from this series, and agree with Blake that they show no approach to *coccinea*, of which Carnegie Museum has the type series. Whether there is any intergradation between *rhodinolaema* and *coccinea* in eastern Colombia north of the Sierra de Macarena and south of Boyacá, or whether these two subspecies are isolated from one another, remains to be determined. In fact, it is obvious that much is yet to be learned about the distribution and characters of populations of *Habia rubica* in Colombia.

Specimens examined: Specimens of most of the subspecies of *Habia rubica*, from both Central and South America, are available at Carnegie Museum. I am indebted to Mrs. Albert Stickney of the Peabody Museum of Natural History, Yale University, and to Dr. Emmet R. Blake of the Field Museum of Natural History, for lending me critical supplementary specimens. The detailed comparisons were made with the following:

H. r. rubra: Trinidad (various localities), 9.

H. r. crissalis: Venezuela, Sucre: Mirasol, 2; El Yaque, 3; Yacua, 2; Pargo, 2.

H. r. mesopotamia: Venezuela, Bolívar: Río Yuruán, 8.

H. r. coccinea: Colombia, Boyacá: La Colorada, 5 (including type); Venezuela, Mérida: Azulita, 3.

H. r. rhodinolaema: Colombia, Meta: Sierra de Macarena, 2.

H. r. subsp: Colombia, Magdalena: El Cauca, 1.

More weights of the Carmine Bee-eater

by P. L. Britton and R. J. Dowsett

Received 10th August, 1968

Dowsett weighed 105 breeding adult Carmine Bee-eaters *Merops nubicus nubicoides* Des Murs and Pucheran at two colonies near Mfuwe in the Luangwa Valley, Zambia (13° 7′ S., 31° 45′ E.) in October 1966. All birds were weighed at dawn, before they had fed. Their weights ranged from 44.5 to 65.0 gm., average 54.4 ∓ 4.1 gm. At colony A, 24 birds on 1st October averaged 56.5 gm.; at colony B, 55 birds on 9th October and 40 (including 14 recaptures) on 15th October averaged 53.6 and 53.8 gm. respectively. However, although there is virtually no difference in mean weight between the birds on 9th October and those on 15th October, birds recaptured on 15th October showed the following differences from 9th October: fourteen had decreased by 1.0-15.0 gm., average 4.5 gm.; two showed no change; and two had gained 1.5 and 2.0 gm. respectively.

If colony B mean weight is compared with the colony A mean weight, using a *t*-test, the difference between the means is statistically significant ($P < 0.01$), colony B birds being the lighter. As all birds can be considered members of a single Luangwa population, and all colony A birds were weighed before any colony B birds, this difference, together with recapture evidence, indicates a weight loss in adults during the first two weeks of October.

Britton (1967) has discussed weight variation in this species (under the name *M. nubicoides*) in detail, using data obtained at Beatrice, Rhodesia (18° 17′ S., 30° 57′ E.) Having allowed for the fact that Dowsett's birds were weighed at dawn, by reducing Beatrice means by 1.0 gm. (see fig. 1 in Britton, 1967), the September (dry season) Beatrice weights, which form the lightest series for that locality, average 60.1 gm. compared with 54.4 gm. for October (also dry season) Luangwa birds. Most young at both Luangwa colonies had hatched in the last few days of September, and it is generally recognised that, all other factors remaining constant, weights are very low during the period when young are being fed (Nice, 1938). This was not, however, the case at Beatrice where young in 1965 did not hatch until early November, after the rains had begun; the October Luangwa birds were feeding young in the dry season. Britton considered it likely that the rains caused food supplies to increase so that feeding of the young was not the burden that it would otherwise have been. This apparent increase in food supply seemed to more than compensate the effect of any increased physiological strain, so that weights were higher when young were being fed than in the pre-laying period. The low Luangwa weights are to be expected, then, as the birds were carrying the full burden of feeding the young on possibly meagre food supplies.

It is likely that any weight loss in adults associated with the feeding of young will continue until the young are fledged, as naturally the bigger the young in the nest, the more food they will consume. Such an argument might explain the apparent weight loss during the latter part of the breeding season. But there is the complication of the growth pattern of the young of hole-nesting birds, which reach their maximum pre-fledging weight (larger than their fledging weight) some days before leaving the nest: see, for example, Skutch (1967) while Dr. C. H. Fry (in prep.) has considerable evidence of such a pattern in *Merops bulocki* in Nigeria.

Eighty wing lengths for Luangwa birds have a mean of 153 mm. compared with 151 mm. for Beatrice birds (table 2 in Britton, 1967). The considerable difference in average weight between Luangwa birds and Beatrice birds, as discussed above, is unlikely to be the result of geographical size variation within the species, as the two localities are only 360 miles apart. Some of this difference could, however, be explained by Bergmann's Rule, as the altitude of Beatrice is 4,400 feet compared with 1,800 feet for Mfuwe. But as the minor difference suggested by the average wing measurements contradicts Bergmann's Rule, the weight difference discussed is probably physiological in origin.

SUMMARY

105 Luangwa breeding Carmine Bee-Eaters *Merops nubicus nubicoides* were very light in weight and it is suggested that this is because young were being fed in the dry season on possibly meagre food supplies. There is evidence of a weight loss in adults between 1st October and 16th October, possibly as a result of an increased demand upon the adults when the nestlings grow larger.

ACKNOWLEDGMENTS

We would like to thank C. W. Benson for reading and commenting on the original draft of this paper.

References:

Britton, P. L. 1967. Weights of the Carmine Bee-Eater *Merops nubicoides*. *Ibis*, 109: 606–614.
Nice, M. M. 1938. The biological significance of bird weights. *Bird-Banding*, 9: 1–11.
Skutch, A. F. 1967. Adaptive limitation of the reproductive rate of birds. *Ibis*, 109: 579–599.

Recent records new to the North Atlantic islands

by D. A. Bannerman

Received 26th November, 1968

During the progress of the four-volume work on the birds of the Canaries, Madeiran Islands, Azores and Cape Verde Islands (1963–1968) upon which my wife and I have been engaged, a certain number of species made their appearance in the islands for the first time too late for inclusion in the appropriate volume. It was our custom therefore to include details of these new records in the succeeding volume in an Addendum. But from long experience we are fully aware that records, however important, which may be included in Addenda, and not in their proper volume, are apt to be overlooked. That applies not only to future workers in these groups, but also to the Editor of *The Zoological Record* upon which so many investigators rely. On the other hand records which appear in the *Ibis* or the *Bulletin of the B.O.C.* are seldom passed over, and that is why, at the expense of some repetition, we ask leave to bring the most important of these records to notice. Only species which are new to the respective archipelago will be mentioned, with one striking exception.

The outstanding occurrence for many years has been the re-discovery alive in January 1968 of the Azores Bullfinch (*Pyrrhula p. murina*) in an island of the archipelago from which it was previously known. We had predicted that it would be found again and although we failed to see the bird ourselves during either of our recent visits to these islands we learned enough from local residents to feel certain the bird was not exterminated.

It was first reported by a Dutch zoologist Mr. J. A. Van Vegten while on a visit to São Miguel in October 1967. He was convinced he had seen the bird in one of its old haunts, where we ourselves had searched for it daily for a week without success. Mr. Van Vegten reported his alleged discovery to Professor K. H. Voous of Amsterdam and a note was published in *Ardea* 56, 1968, p. 194, recording the event, to which Professor Voous added a postscript, thus lending his authority to the record. He was kind enough to send me a copy. This is the first occasion when the Azores Bullfinch has been seen by an overseas naturalist for 41 years.

Undisputable evidence was soon forthcoming for, unfortunately, a reward was offered by a resident in the island with scant consideration for the bird's preservation with the unhappy result that a bullfinch was caught alive but with a leg broken. It survived for one night only and was photographed after death—I have a copy of the press-photo. The specimen was taken to the Director of the Museu Carlos Machado at Ponta Delgada. The sex was not ascertained.

My friend Senhor José Maria Ālvares Cabral, the director of the Museum and himself a keen protectionist has favoured me with an account of the bird's capture and how this came about. His wife Senhora Clotilde Cabral has most kindly translated into French the press accounts in Portuguese for my benefit. Senhor Ālvares Cabral himself knew nothing of these happenings until the bird's body was brought to his museum, and we can rest assured that he will take every means in his power to prevent such a thing happening again. The Azores Bullfinch is a protected bird and anyone taking its eggs or capturing or shooting a specimen is liable to severe penalties.

The following are new to the avifauna of the Atlantic islands since we began our work. They are listed in sequence of their occurrence and not in scientific order. The references in brackets, following the records, refer to the volume and page of *Birds of the Atlantic Islands* where mention was first made of the occurrence in an Addendum and where details of the captures are given.

The list is as set out below:

Western Sandpiper. First reported record for Canaries of *Calidris mauri*, Tenerife 26–27 Dec. 1960 (Vol. 2, p. 192).

African Little Bittern. First record of *Ixobrychus minutus payesi* established from the Canaries, formerly incorrectly identified. (Vol. 2, p. 193).

Dotterel. First record of *Eudromias morinellus* as a migrant to the Salvage Islands (Vol. 2, p. 196).

Brown Booby. First record of *Sula leucogaster* in the Azores. Bird captured off Sao Miguel, 1966 (Vol. 3, p. 250).

American Nighthawk. First record of *Chordeiles minor* off Pico at sea. Photographed Sept. 1966 (Vol. IV, p. 451).

Lesser Snow Goose. In Oct. 1967, a Lesser Snow Goose *Chen hyperboreus* (Pallas) was shot on Terceira and is preserved at Angra do Heroismo. This confirms the appearance in the Azores of a goose tentatively assigned to this species which has been shot, but not preserved, on São Miguel and the record, of unknown exact date, was placed in square brackets (*Birds of the Atlantic Islands*, Vol. 3, p. 192). We noted at the time "we may expect the record to be repeated in course of time." (Vol. IV, p. 451).

American Sparrow-hawk. First record of *Falco sparverius* in Azores, captured Terceira, 1968 (Vol. IV, p. 451).

Red-billed Tropic Bird. Two seen off Porto Santo Sept. 1966. First occurrence of *Phaëthon aethereus* in the Madeiran islands. Nearest breeding colony in the Cape Verde Islands. (Vol. IV, p. 451).

Common Gull. First record of *Larus canus* in the Azores, Flores 1967–68 (preserved); the eighth migratory gull to be recorded from the Archipelago. (Vol. IV, p. 452).

Gull-billed Tern. Reported seen off São Miguel Oct. 1967. First record for the Azores of *Gelochelidon nilotica* (Vol. IV, p. 452).

American Redstart. Captured at sea in area of Azores. Oct. 1967. First records for the area of *Setophaga ruticilla*. Specimens preserved (Vol. IV, p. 452). If accepted this makes the 24th American species to have been recovered in the Azores Archipelago.

We look upon the sight-record of a party of European Wrens *Troglodytes troglodytes*, reported from São Miguel, as being open to doubtful identification. The occurrence, reported in *Ardea* 56, 1968, p. 194, is too unusual to accept without a specimen in support (Vol. IV, p. 452).

Bean Goose. *Anser arvensis* Brehm. The capture on the sea off Terceira of a Forest Bean Goose at the beginning of October 1968, is an event of some interest and is the first record of the species for the Azores. The bird is alive in the possession of Sr. José Albino Fernandes and the occurrence was brought to my notice by Colonel José Agostinho to whom the bird was brought for identification.

At my request he has confirmed that the bird has a round (not oblong shaped) nail at the extremity of the mandible, thus proving it to be a Forest Bean Goose and not a Tundra Bean Goose (*rossicus*). Colonel Agostinho informs me that the bird appears to be quite happy feeding with Senhor Fernandes' poultry and that arrangements have been made in the event of its death, for its preservation in the local museum. The species has once been recorded from Madeira.

American Black Duck *Anas rubripes*. A specimen shot on Terceira 28th November, 1968. The bird was brought to Colonel Agostinho and identified by him.

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Mr. C. W. Benson, c/o University Museum, Department of Zoology, Downing Street, Cambridge. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new series or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *susp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers which cost 5*s*. each, should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Members who have back numbers of the *Bulletin*, which they no longer require are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 5*s*., payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, Mr. D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

5 //

R

Bulletin of the

British Ornithologists' Club

Edited by
C. W. BENSON

Volume 89 No. 4 August 1969

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, BT., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

Prof. J. H. Elgood

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1969

16th September—Speaker: Mr. L. Cornwallis. Subject: The Birds of Fars, S.W. Iran. Venue: The Criterion, Piccadilly Circus, London, W.1.

25th November—Speaker: Mr. P. J. Olney. Subject: Avocets and their management. Venue: To be announced.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 89 No. 4 Published: 20th August, 1969

The six hundredth and fifty-ninth meeting of the Club was held at The Phœnix, 14 Palace Street, London, S.W.1 on 15th July, 1969.

Chairman: Dr. F. J. Monk

Members present: 15; Guests: 3

Dr. Alexander Wetmore spoke to the Club about the Birds of Panama.

A survey of extinct and nearly extinct birds in the Royal Albert Memorial Museum, Exeter

by C. A. Howes

Received 8th February, 1969

Throughout the hundred years of the R.A.M. Museum's establishment, its natural history collections, notably those containing ornithological material, have been steadily growing both in size and scope. The acquisition of bequests such as those from F. W. L. Ross of British birds, from R. P. Nicholls of North American birds, from Sir Wilfred Peek of New Zealand material, and from General W. Smee of birds from India and Australia have contributed significantly to this becoming one of the foremost collections in the country.

Although a number of workers have some knowledge of the extent of this collection, its present contents by no means appear to be generally known. Lowe 1939, *Ibis* 1 : 65–75, records as occurring in the skin collection two types, four extinct species, an Eskimo Curlew *Numenius borealis* thought then to be extinct and a number of extreme rarities one of which, the Piopio or South Island Thrush *Turnagra capensis capensis*, is now feared extinct, last reports being in 1947–48. Since 1939 a great deal of material has been acquired both duplicating and adding to Lowe's list. Also during this period the status of many species represented in the Exeter collection has appreciably deteriorated to the point of near extinction.

The following catalogue, resulting from a survey carried out on the ornithological collection, is based on James Fisher's list of extreme rarities (with a maximum population of 2,000 individuals) and extinct species, printed in *The World of Birds* published by Macdonalds 1964. Please note that all measurements quoted were taken from the specimens in mounted or in study-skin state (many being 70–100 years old) and not when freshly dead. The methods of taking measurements are those demonstrated by Witherby *et al. Handbook of British Birds*, vol. 1.

SYSTEMATIC LIST

Maleo *Macrocephalon maleo*

Mounted. Adult ♂. Celebes. 24/1940.

Wing 296; tail 143; bill 46; tarsus 78 mm.

An excellent specimen in an alert stance, right hind toe is clubbed.

Heath Hen *Tympanuchus cupido cupido.*
Skin. Adult ♀ Market, Highland Falls, New York State. 81/1915.
Wing 220; tail 80; bill 31; tarsus 48 mm.

Hooded Crane *Grus monachus*
Skin. Japan (no data) 72/1949.
Wing 500; tail 170; bill 108; tarsus 170 mm.
As the left wing has been pinioned this bird was apparently in a collection at some time.

Manchurian Crane *Grus japonensis*
Skin. Adult (originally from Manchuria). Died in London Zoo. 8/1946.1.
Wing 645; tail 260; bill 163; tarsus 250 mm.
Both wings entire.
Skin. Adult (originally from Manchuria). Died in London Zoo. 21/1942.
Wing 664; tail 270; bill 156 (last 75 mm. deformed); tarsus 260 mm.
Left wing pinioned.

Siberian White Crane *Grus leucogeranus.*
Skin. Imm ♂ East Siberia or Japan. 9/1943.4.
Wing 510 (right wing pinioned); tail 160; bill 103; tarsus 105 mm.

Kagu. *Rhynochetos jubatus.*
Skin. Adult ♀ (originally from New Caledonia), died in Paignton Zoo, 6 February 1940. 9/1940.
Wing 275; tail 180; bill 61; tarsus 62 mm.
Skin. Adult ♂ (originally from New Caledonia) died in Paignton Zoo, 4 September, 1940. 76/1940.1.
Wing 285; tail 165; bill 62; tarsus 63 mm.
Iris—deep crimson. Legs and feet darkish brown. Bill yellowish horn, brown around the nostrils.
Skin. Adult ♂ (originally from New Caledonia). Died in Paignton Zoo, 4th September, 1940. 76/1940.2.
Wing 258; tail 175; bill 64; tarsus 101 mm.
Iris deep crimson, legs dirty yellow/brown, bill yellow horn.
Skin. Adult ♀ (originally from New Caledonia). Died in Paignton Zoo, 4th September, 1940. 76/1940.3.
Wing 270; tail 190; bill 67; tarsus 110 mm.
This group of specimens is in good condition, though failure to adequately degrease during skinning has resulted in "burning" of the flesh and discoloration of the plumage on the underside.

Eskimo Curlew *Numenius borealis.*
Skin. Adult. Lechevallier, N. America, 27th January, 1876. 81/1915.
Wing 202; tail 64; tarsus 39 mm; bill, tips of upper and lower mandibles broken off.
Specimen slightly faded.

Hudsonian Godwit *Limosa haemastica* = (*hudsonica*).
Skin. Adult (?). Lechevallier, N. America, 27th January, 1876. 81/1915.
Wing 225; tail 80; bill 102; tarsus 70 mm.

Passenger Pigeon *Ectopistes migratorius.*
Mounted. Adult ♂. No data. 252 c.
Wing 215; tail 180; bill 17; tarsus 22 mm.
Mounted. Adult ♂, N. America (Franklin search Expedition 1825). 40/1938.1.
Wing 212; tail 164; bill 17; tarsus 22 mm.
Mounted. ♀. N. America (Franklin search expedition, 1825). 40/1938.2.
Wing 206; tail 157; bill 19; tarsus 22 mm.
Skin. Imm. ♂. Putman Co: New York State, 21st September, 1875. 81/1915.
Wing 193; tail 129; bill 18; tarsus 21 mm.
Skin. Adult ♂. Orange Co: New York State, 2nd May, 1875. 81/1915.
Wing 206; tail 173; bill 16; tarsus 23 mm.
Skin. Adult ♂. Canada(?) No data. 80/1919.
Wing 212; tail 172; bill 16; tarsus 20 mm.
Skin. Juv. Canada. 80/1919.
Wing 189; tail 115; bill 17; tarsus 22 mm.
Skin. ♂. N. America or Canada. B.249 a.
Wing 210; tail 175; bill 16; tarsus 24 mm.
Skin. ♂. Canada. B. 249 b.
Wing 212; tail 180; bill 16; tarsus 20 mm.
B. 249 a and b were at one time mounted specimens.

Kakapo. *Strigops habroptilus.*
Mounted. Adult. New Zealand. No data. 86/1907.
Wing 276; tail 215; bill 40; tarsus 49 mm.
Mounted. Adult. New Zealand. No data. 87/1907.
Wing 265; tail 176; bill 34; tarsus 40 mm.
Skin. Adult. South Island, New Zealand. 98/1907.
Wing 280; tail 205; bill 38; tarsus 47 mm.
Skin. Adult. New Zealand, 1892. 10/1956.4.
Wing 280; tail 200; bill 40; tarsus 43 mm.

Turquoise parakeet *Neophema pulchella.*
Skin. Adult ♂. Australia. No data. B. 1416.
Wing 108; tail 101; bill 11; tarsus 11 mm.
Iris yellow, bill and feet dark brown.

Beautiful parakeet *Psephotus pulcherrimus.*
Skin. Adult ♂. Australia. 29/1916.1.
Wing 124; tail 153; bill 14; tarsus 13 mm.
This specimen has been mounted at some time but has since been broken down into a cabinet skin. It is still in excellent condition.
Skin. Adult ♀. Australia. 29/1916.2.
Wing 123; tail (?); bill 12; tarsus 13 mm.
This specimen too has been broken down from the mounted state. Fading has occurred notably on the head, and the tips of the tail feathers have been cut.

Carolina parakeet *Conuropsis carolinensis.*
Skin. Adult. Stamford, Florida, U.S.A., 1884. 81/1915.
Wing 190; tail 140; bill 24; tarsus 13 mm.
Specimen in fair condition, abrasion of remiges and retrices suggests an old plumage.

Mounted. Adult. No data. 56/1965.
Wing 138; tail 130; bill 34; tarsus 11 mm.
Most of underparts, also tail and feet badly damaged.

Ivory-billed Woodpecker. *Campephilus principalis.*
Skin. Adult ♀. North America. No data. 81/1915.
Wing 250; tail 144; bill 96; tarsus 37 mm.
Mounted. Adult ♂. No data. 56/1965.
Wing 262; tail 152; bill 71; tarsus 36 mm.
The tail and feet of this specimen are badly damaged.

Piopio or South Island Thrush *Turnagra capensis capensis.*
Skin. Adult. New Zealand (South Island). 102/1907.
Wing 119; tail 110; bill 23; tarsus 34 mm.
Very good specimen, though it has been mounted.

Saddleback *Creadion carunculatus.*
Skin. Adult. New Zealand. No data. 103/1907.
Wing 98; tail 90; bill 35; tarsus 37 mm.
Very good specimen, though it has been mounted.
Skin. Adult ♀. Tapia, New Zealand, 1877. 15/1943.
Wing 100; tail 83; bill 36; tarsus 33 mm.

Huia *Heteralocha acutirostris.*
Mounted Adult ♂ } No data—specimens mounted 75/1948
Mounted Adult ♀ } together in a sealed case.
Mounted. Adult ♂. North Island, New Zealand. 26/1941.1.
Wing 223; tail 179; bill 53; tarsus 74 mm.
Mounted. Adult ♀. North Island, New Zealand. 303/1907.
Wing 260; tail 160; bill 84; tarsus 60 mm.

An undescribed race of Black-headed Apalis

by P. A. Clancey

Received 13th March, 1969

In 1938 the late Austin Roberts described *Apalis chirindensis lightoni* from Dondo, Beira, southern Moçambique [Roberts (1938)], since when this name has been applied to two widely separated population complexes of the Black-headed Apalis *Apalis melanocephala* (Fischer and Reichenow): one on the humid coast of Moçambique in the neighbourhood of Beira and the other a chain of isolates on forested mountain "islands" from southern Malawi, north to Portuguese Niassa, Moçambique [(Benson (1953), Mackworth-Praed and Grant (1955, 1963), and White (1962)].

Lying geographically interposed between these two population groups of the present race *lightoni* are other quite different looking birds, referable to the races *A.m. tenebricosa* Vincent, 1933: Namuli Mt., Quelimane district, northern Moçambique, and *A.m. fuliginosa* Vincent 1933: Cholo Mt., southern Malawi. I have [Clancey (1968)] already drawn attention to the fact that the topotypical and the referred Malawi populations of *A.m. lightoni* almost certainly belong to two discrete subspecific taxa, and have now confirmed that this is indeed so as a result of further comparisons carried out at the

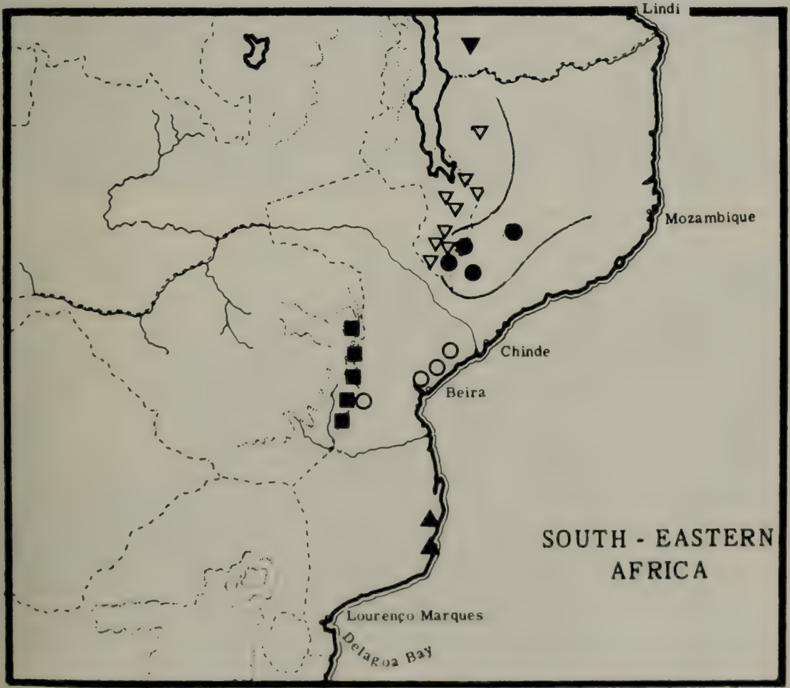
Durban Museum. I now restrict *A.m. lightoni* to coastal Moçambique between the Zambesi and Save Rivers, separating the referred Malawi populations as:—

Apalis melanocephala adjacens, subsp. nov.

Type: ♂, adult. Njesi Plateau, *c.* 10 miles N. of Unangu, Niassa, northern Moçambique (12° 45′ S., 35° 20′ E.). *c.* 5,000 ft. a.s.l. 11th August, 1945. Collected by J. Makawa for C. W. Benson. In the British Museum (Nat. Hist.), London. B. M. Reg. No. 1946: 5. 3383.

Description: Similar to *A.m. lightoni* of coastal southern Moçambique north of the Save R., but male darker and more sooty, less clear leaden grey above Chaetura Drab [Ridgway (1912) (pl. xlvi), as against Deep Mouse Gray (pl. li)]. Below, not so washed or variegated with smoky grey over the breast, sides and flanks, such parts being cream. Differs more sharply in having a much longer tail with broader white tips to the rectrices, thus: tails of 5 ♂♂ 68–72 (69.9), *versus* 56–64 (60.0) in 10 ♂♂ of *lightoni*. Female unlike the adult male in coloration (in *lightoni* the sexes are similar in colour but differ in size), having the mantle, scapulars and rump washed with olive-green in fresh dress. Tail longer: 52.5–60, as against 48 mm. in ♀♀ *lightoni*.

From the contiguous races *A.m. tenebricosa* and *A.m. fuliginosa* differs in that the male is relatively grey above, not deep brownish black, and is lighter below, less washed with dusky over the breast, sides and flanks.



Sketch-map showing the disposition of the southern races of *Apalis melanocephala* and of *Apalis chirindensis.*

▼ *A.m. mubuluensis* ▽ *A.m. adjacens*
● *A.m. tenebricosa and A.m. fuliginosa* ○ *A.m. lightoni*
▲ *A.m. addenda* ■ *A.chirindensis*

Female lighter, less blackish over the head-top and hind neck, and paler and greener over the mantle, scapulars and rump. Similar in tail-length.

Distribution: Montane forests of southern Malawi from Blantyre and Chiradzulu north to Mt. Mangoche and Namizimu, and still further north in Portuguese territory at Vila Cabral and Unangu (Njesi Plateau), Niassa district, western northern Moçambique. Benson (1953) lists "*lightoni*" (=*adjacens*) from "hills" near Blantyre, Chiradzulu, Zomba, Chikala, Mangoche and Namizimu.

Measurement of the Type: Wing (flattened) 51, culmen from base 14, tarsus 18, tail 71 mm.

Material examined: 10. (*Malawi:* Ndirande Mt., Blantyre, 1, Zomba Plateau, 1, Chikala Mt., Upper Shiré, 1, Mangoche Mt., 6; *Niassa, northern Mocambique:* Njesi Plateau, Unangu, 1). *A.m. lightoni*, 28. *A.m. addenda*, 3.

Remarks: As far as the material available to me goes, I do not find *A.m. fuliginosa* very convincingly different from *A.m. tenebricosa*, and would be inclined to merge the two races under the latter name. The development of a greyish or olivaceous wash over the mantle and rump in males seems to occur in varying proportion in all the southern montane isolate populations having sooty black-dorsalled males, and I suspect the character defined by Vincent (1933) for *fuliginosa* is actually individual rather than racial. *A.m. fuliginosa* appears to have been named on a very limited sample. While named from Malawi, I note Mackworth-Praed and Grant do not include *fuliginosa* in their 1963 work, referring all the southern Malawi populations to *A.m. lightoni*.

I am grateful to Dr. D. W. Snow, Keeper of the Bird Room, British Museum (Nat. Hist.), for the loan of material.

References:

Benson, C. W. 1953. *Check List of the Birds of Nyasaland*, p. 59.
Clancey, P. A. 1968. *Durban Mus. Novit.*, vol. viii, 13, p. 193.
Mackworth-Praed, C. W. and Grant, C. H. B. 1955. *Birds of Eastern and North Eastern Africa* vol. ii, pp. 402–405.
— 1963. *Birds of the Southern Third of Africa*, vol. ii, pp. 240, 241.
Ridgway, R. 1912. *Color Standards and Color Nomenclature*, Washington.
Roberts, A. 1938. *Ostrich*, vol. ix, 2, pp. 118, 119.
Vincent, J. 1933. *Bull. Brit. Orn. Club*, vol. liii, pp. 141, 142.
White, C. M. N. 1962. "A Check List of the Ethiopian Muscicapidae (Sylviidae)", *Occ. Papers Nat. Mus. S. Rhod.*, vol. 26B, 3, pp. 707–709.

Little Gull in Sierra Leone

On 11th October, 1967, a first winter Little Gull *Larus minutus* Pallas was caught on the beach near Freetown, Sierra Leone, by men employed by the Zoology Department, Fourah Bay College, to collect terns for parasitological research. The bird which was brought in alive and in good condition was later killed and is now in the Zoology Department collection. This is the first record of a Little Gull in Sierra Leone and apparently a new bird for West Africa.

G. D. Field
D. F. Owen
Fourah Bay College,
University of Sierra Leone,
Freetown, Sierra Leone.

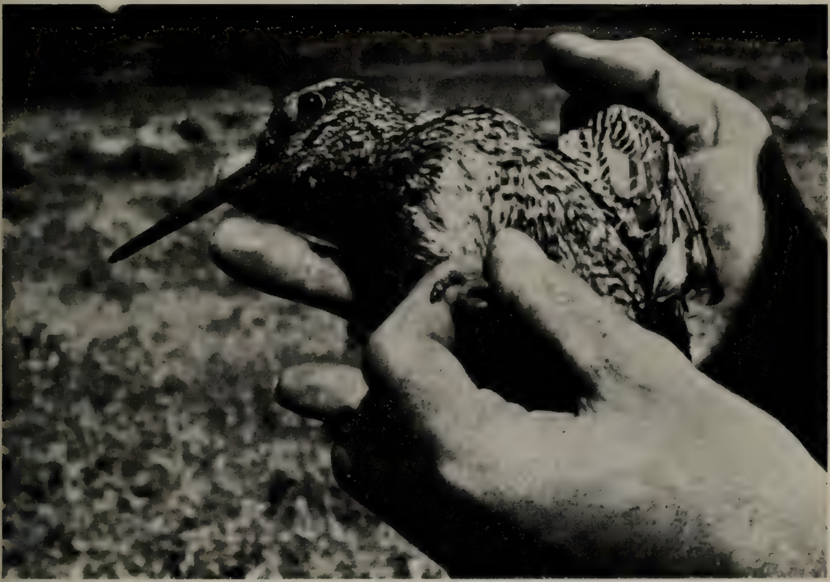
14th September, 1968

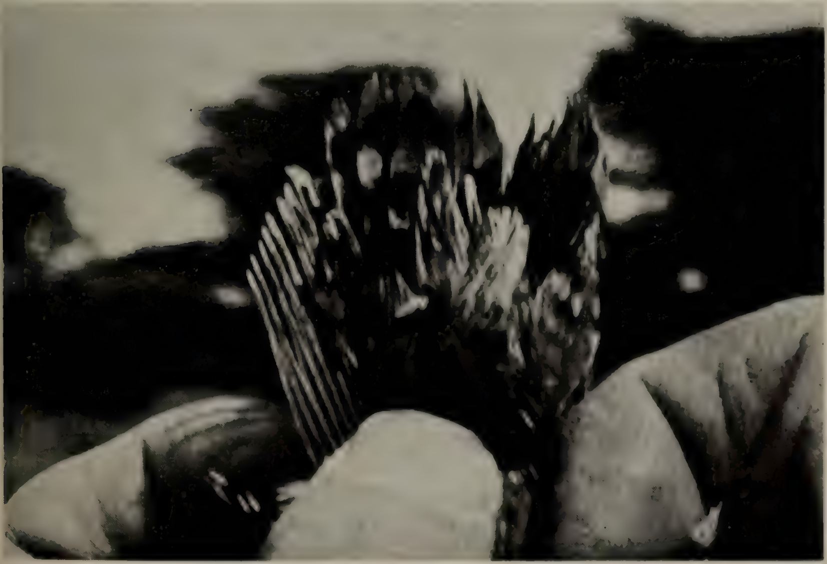
A record of *Gallinago stenura* from Kenya

by G. C. Backhurst

Received 19th February, 1969

On 1st January, 1969 an example of the Pintail Snipe *Gallinago stenura* (Bonaparte) was caught in a mist net at a small marsh near Naivasha, Rift





Valley, Kenya (*c.* 0° 45′ S., 36° 25′ E.). The bird was ringed and measured, and then photographed by Dr. E. D. Steel; the bill from feathers was 53 mm, wing 111 mm (flattened but lateral curvature not straightened), and it weighed 110 g at 10.30 hrs. local time. On release the bird flew off strongly. Eight pin-like feathers are visible on the right side of the tail in the photograph.

I can trace only one previous record from Africa, that of V. G. L. van Someren (*Jl E. Africa Uganda nat. Hist. Soc.:* No. 35, 1929) of "a fine male in full plumage" which he shot on the Juba River sometime between 1920 and 1923. The Naivasha bird would seem to be the first record for Kenya and only the second for Africa. According to Vaurie 1965, (*The Birds of the Palearctic Fauna*, Non-Passeriformes) the Pintail Snipe winters "from southeastern China and Formosa south to the Indo Chinese countries and Malaya, India south to Ceylon and the Maldives, and the Sundas east occasionally to Celebes;" he then adds "also to northeastern Africa", however, Dr. Vaurie informs me that he was referring to van Someren's record when he wrote this phrase.

Gambian observations, winter 1946-47

Sir A. Landsborough Thomson remarks (1966, *Ibis* 108: 281–282) on the paucity of published records from The Gambia before the present decade. I was resident in Bathurst from October 1946 to April 1947 and I have some unpublished records from that area, the majority from the Kombos. The "Stink corner" marsh, which dried out early in March, lay between the Fajara and Yundum roads at their junction about two miles west of Denton bridge. I understand it has now been filled in.

Hagedashia hagedash West African Hadada. Cawkell & Moreau (1963, *Ibis* 105: 156–178) state it is no longer common. In 1947 a pair was seen regularly at "Stink corner" marsh from January to early March. Frequently seen at pools along the dried up bed of the River Sando during March. Also recorded at Bald Cape on 12th January, at Brufut on 8th February, and at Serekunda on 10th March, 1947.

Falco chiquera Red-necked Kestrel. Two records only, one at "Stink corner" marsh on 17th January and one at Serekunda on 1st March, 1947.

Leucopolius marginatus White-fronted Sand-plover. In postscript to C & M (1963, *Ibis* 105 : 156–178) it is stated that two seen on the dunes in May, 1962, were the first records for The Gambia. I have records of two on the sandy shore above high tide mark about a mile to the north of Barra Point on 25th and 26th January, 1947, and one at the same place on 7th April.

Hirundo smithii Wire-tailed Swallow. On 9th February, 1947, a good close view was obtained of five amongst a small flock of *Hirundo lucida* on telegraph wires along the road between Denton Bridge and "Stink corner" marsh.

E. A. Chapman,
9 Braeside Close,
Sevenoaks, Kent.

1st February, 1969

Taxonomic and distributional notes on *Apus acuticauda*

by R. K. Brooke

Received 18th October, 1968

The Dark-backed Swift *Apus acuticauda* (Jerdon) is known chiefly from Assam where it breeds in cliffs. It is closely related to, but not conspecific with, the Eastern White-rumped Swift *A. pacificus* (Latham) which differs from it in having a white rump and not noticeably emarginate outer rectrices. This communication deals with the correct name of the species, the alleged geographical variation, the time of moult, age characters and distribution.

Ripley (1961) has pointed out that this swift was first named by Jerdon (1864) who spelt the name *acuticanda*. Two questions arise: is the "n" a *lapsus calami* or printer's error for "u" so that the intended name was *acuticauda;* did Jerdon intend to name the species adjectivally or by a noun in apposition to the generic name? I regard the "n" as a *lapsus* for "u" since in the following line Jerdon refers to "the more pointed outer tail feathers" and thus must be assumed to have thought that *acuticauda* was an appropriate name. However, the final "a" ought to stand since *Cypselus*, which is the genus in which Jerdon placed his species, was always (and correctly) treated as a masculine noun and he must be assumed to have intended to create a noun in apposition to the generic name, a practice which, while still valid, was more widely practised then than now. In addition, Blyth (1865), doubtless thinking on the same lines, called the species *acuticauda* when purporting to describe it as new to science. I therefore consider that the correct name is *Apus acuticauda* (Jerdon). I have discussed this point with Mr. E. Eisenmann of New York who agrees that this is the correct approach.

Vaurie (1959) has explained very adequately why *A. acuticauda* is a good species and not conspecific with *A. pacificus* as suggested by Lack (1956). Koelz (1954) described as a separate race *rupchandi* from Blue Mountain in the Lushai hills of extreme southern Assam largely on the grounds that the white tips to the feathers of the underparts were broader, giving an overall pale effect and that the gloss on the upperparts was richer or more intense. While in New York 20 specimens were assembled for study, doubtless the largest series ever brought together: six came from the American Museum of Natural History, 13 including paratypes of *rupchandi* from the Museum of Zoology of the University of Michigan and one from the U.S. National Museum in Washington. Specimens had previously been superficially examined at the Peabody Museum of Natural History of Yale University and at the Field Museum of Natural History in Chicago. It appears that Ripley (1961) was quite right in uniting *rupchandi* with the nominate race and treating the species binomially: it is necessary to say this since Ripley does not appear to have published reasons for his decision. In specimens of *A. acuticauda* as of most swifts, some foxing occurs with age: this occurs in a uniform manner so that variation in intensity of colour between different parts of the body remains constant [see also Abdulali (1966) on *A. affinis* (Gray)] and leads to a browner seeming bird. The white edges of feathers always abrade rapidly in life; in addition, in dark species, the blue-black gloss wears first to dull black and under exceptional conditions of abrasion in life even to dark brown. As noted below, the time of moult of the Lushai hills birds is later than in birds from the Khasi hills to the north-west. Failure to appreciate these matters led to the naming of *rupchandi*.

Nonetheless there is some difference between the Khasi and Lushai hills birds: it does not lie in their measurements (see Table) but in the timing of their wing moult. Stuart Baker (1927) stated that eggs were laid in the Khasi hills from 25th March to the end of April: birds taken there at the end of April are in normal to worn plumage or just starting the post nuptial moult of the primaries and a late September bird has virtually completed its primary moult. It is normal for non-migratory breeding swifts to start the wing moult immediately after egg laying and to take at least five months over the process, but the Lushai hills birds taken in April are in fresher plumage than the Khasi hills birds. It is not known when these southern birds breed, so that it is not yet possible to say whether they breed later in the year and moult after that or whether they breed at the same time as the Khasi hills birds and defer moulting to a later period. None of the specimens show the aberrant moult of the tenth (outermost) primary described by De Roo (1966) for *A. apus* (L.) but the sample is too small to warrant a statement that this moult does not occur in *A. acuticauda*.

As usual in Old World swifts with deeply forked tails it is possible to group specimens into age classes on the shape of the fifth or outermost rectrix (Brooke, in press). In juvenals the fifth rectrix is pointed but not emarginate at all on the inner web. In subadult birds there is some degree of emargination and in adults it is well developed: fig. 1 in Vaurie (1959) is based on an adult bird which I have examined. Discrimination of subadult birds should only be done when a series is available for comparison or after long experience as otherwise some may be taken for adult birds. The figures in the Table show that no mensural character can be used for age discrimination. Arising from the foregoing we can now say that of the five April

TABLE

Measurements of *Apus acuticauda* in millimetres obtained from material examined.

	Number of Specimens	*Wing length*	*Depth of tail fork*	*4th–5th retrix*	*Chord of tomium*	*Culmen*
Khasi hills						
adult males	3	171, 174, 185	20, 26, 27	5, 7, 7	18.5, 19, 20	8, 8.5, 9
adult females	4	168, 171, 173, 173	23, 24, 25	6, 6, 6, 6.5	18.5, 19, 19.5	7, 8, 8
adult unsexed	1	175	25	6.5	—	8.5
immature female	3	170, 177, 177	23, 24	5, 6, 6.5	19	8
juvenal female	1	174	22	5	18	8
Lushai hills						
adult males	2	173, 177	26, 26	8, 8	19, 20	7.5, 7.5
adult females	2	177, 179	24, 28	7, 7	19, 21	8, 8
immature male	1	172	25	6	20	8
juvenal female	1	166	21	6	19	8
Thailand						
non-juvenal female	1	169	21	—	—	7.5
Averages		(19) 173.7	(17)24.2	(18) 6.4	(14) 19.3	(16) 8.0

Notes:

1. Measurements taken by the methods given in Brooke (1969).
2. According to Koelz (1954) the type of *acuticauda* has a wing of 177 mm. and the type of *rupchandi* which is a female, a wing of 174 mm. I have seen neither type.

taken birds from the Lushai hills four are adult and one is juvenal: the juvenal is in worn plumage whereas the adults are in normal fairly fresh plumage. In both areas subadult and adult birds are in the same stage of plumage development and moult.

The type which is in Liverpool is alleged to come from Nepal where it has not been collected since. One may therefore wonder whether there was an error in the original labelling. Nonetheless it seems unwise to excise Nepal from the range of the species, as swifts are notoriously difficult to collect away from their breeding sites and there may well be one or two colonies in the cliffs of that country particularly in those parts opposite the Khasi hills of Assam. The main series come from the Khasi hills in western Assam (Stuart Baker, 1927) and the Lushai hills in extreme southern Assam (Koelz, 1954). Recently Mr. Ben King collected a female in non-breeding condition and nearly fresh plumage on 16th February, 1965 on Doi Pui hill just outside Chieng Mai in northern Thailand. This is a major extension of range. The specimen is now in the U.S. National Museum. Unfortunately the tail is damaged by shot and it is not possible to say whether the bird is adult or subadult: enough survives of the outer rectrices to show that it is not a juvenal.

The question that immediately arises is whether the Thai bird is a vagrant or represents a previously unknown population. I incline to the latter view. Stuart Baker (*op. cit.*) is by no means clear on whether the Dark-backed Swift migrates or not in the Khasi hills: the tenor of his comments is that there are only local movements. The position in the Lushai hills is unknown but migration is less likely there than away in the north-west of the range. The Thai bird's moult cycle corresponds to that of the Lushai hills birds. The hills of the Burma/China/Thailand triangle are not so well known ornithologically that one can say confidently that the Dark-backed Swift does not occur there. In any case Smythies (1953) mentions a sight record by Stanford of this species from Myitkyina in that area which obtains greater validity from the collection of the Thai specimen. In appearance the Thai bird is darker above and on the head and its cheeks are black and not very dark brown as in all Indian birds. One specimen of uncertain age class is not a sufficient basis on which to recognise a new subspecies but I believe that when a series is available from northern Thailand, preferably from a breeding site, they will prove to be separable from Indian birds.

ACKNOWLEDGMENTS

This study was made while in receipt of a grant from the Frank M. Chapman memorial fund of the American Museum of Natural History. I am obliged to Mr. Ben King for drawing my attention to his Thai specimen; to Dr. Robert W. Storer of the Museum of Zoology of the University of Michigan and Dr. Richard L. Zusi of the U.S. National Museum for the loan of material; to Dr. Charles T. Collins for criticizing the first draft of this paper; to Mr. E. Eisenmann for advice on the nomenclatural question and to Dr. Dean Amadon for facilities for study at the American Museum of Natural History.

References:

Abdulali, H. 1966. The races of *Apus affinis* (J. E. Gray) in the Indian region. *Journ. Bombay Nat. Hist. Soc.* 62 : 3 : 521–528.

Blyth, E. 1865. A few identifications and rectifications of synonymy. *Ibis* I: new series: 27–50.

Brooke, R. K. 1969. *Apus berliozi* Ripley, its races and siblings. *Bull. Brit. Orn. Cl.* 89 : 11–16
De Roo, A. 1966. Age characteristics in adult and subadult swifts; *Apus a. apus* (L.) based on interrupted and delayed wing-moult. *Gerfaut* 56 : 113–134.
Jerdon, T. C. 1864. *The birds of India* III. Geo. Wyman & Co., Calcutta.
Koelz, W. 1954. New birds from Iran, Afghanistan, and India. *Contrib. Inst. Reg. Expl.* 1 : 1–32.
Lack, D. 1956. The species of *Apus*. *Ibis* 98 : 1 : 34–62.
Ripley, S. D. 1961. *A synopsis of the birds of India and Pakistan.* Bombay Natural History Society, Bombay.
Smythies, B. E. 1953. *The Birds of Burma.* Oliver & Boyd, Edinburgh.
Stuart Baker, E. C. 1927. *The fauna of British India including Ceylon and Burma* IV. Taylor & Francis, London.
Vaurie, C. 1959. Systematic notes on palaearctic birds, no. 38: Alcedinidae, Meropidae, Upupidae, and Apodidae. *Am. Mus. Novit.* 1971 : 1–25.

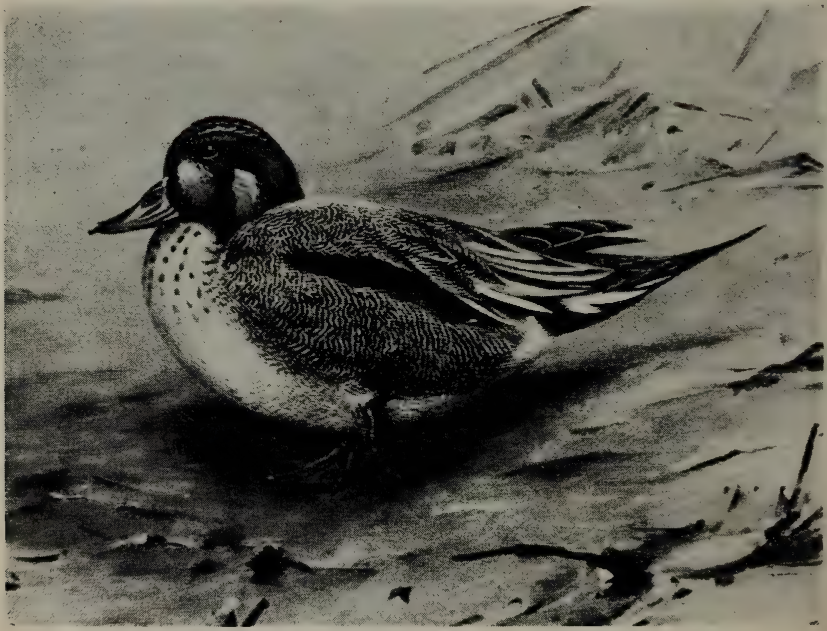
Comments on a wild-shot Pintail x Teal Hybrid

by James M. Harrison and Jeffery G. Harrison

Received 22nd May, 1969

Introduction:—Our attention has been drawn by Mr. Humayun Abdulali to the existence of a ♂ hybrid duck recorded by Glover (1938) as a Teal, *Anas crecca* Linnaeus × Baikal Teal, *Anas formosa* Georgi.

This specimen is in the British Museum (Natural History) collection, Reg. no. 1938. 2.12.1. It was obtained by Col. J. W. Thompson-Glover on 29th December, 1937, at Murgund Jheel, Srinagar, Kashmir. We have been given an opportunity of examining this specimen through the kindness of Mr. J. D. Macdonald, formerly in charge of the Bird Room, British Museum (Natural History), London.

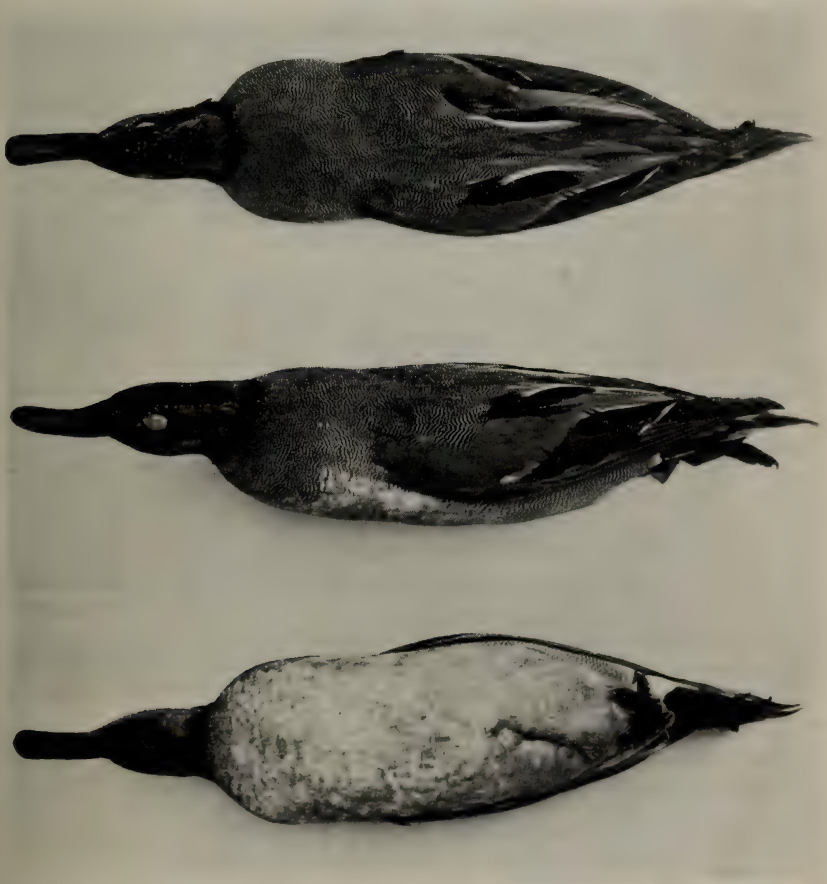


Pintail × Teal, Nile Delta, reproduced from *Nicoll's Birds of Egypt.*

In our opinion the parentage involved is, in fact, Pintail, *Anas acuta* Linnaeus × Teal, *A. c. crecca.*

Our reason for this opinion is that the overall picture is of a strict intermediate between these two species. This is shown by:—

(a) *the head and neck:* the crown is dark chocolate brown, not quite uniform, as there are some dark sepia centres as in Pintail. Over the nape the colour becomes lighter and brighter chestnut, with some elongation of the feathers at the nape, as in the drake Teal. There are marked post-ocular green stripes which meet at the back of the neck as a dark green stripe, whereas in the Baikal Teal the white collar is continued to some extent on to the back of the neck. This is unlikely to have been totally suppressed, were this latter species involved in the hybrid.



Copyright photographs by Dr. Pamela Harrison

Pintail × Teal, Kashmir

The cheeks are intermediate in colour between the chocolate of the Pintail and the chestnut of the Teal. There is minimal bimaculation. This may well have been a factor which led to the determination of the Baikal Teal as one parent involved, but we have already demonstrated that this feature can be seen in many hybrids in which neither parent is normally bimaculated.

Undoubtedly the very extensive black throat patch in the hybrid must have influenced the determination to include the Baikal Teal. However, Kuroda (1937) illustrates the wide variation of the black chin patch in drake Teal which, although not as extensive in this specimen, can be almost absent or very pronounced. In actual fact, Kuroda (*loc. cit.*) gives an extreme measurement for this feature of 36mm. in one specimen in his series. The measurement of the black chin patch in the present specimen is as follows:—length 40 mm. with a maximum width of 26 mm. The length was measured from the point of junction of the black feathers of the patch and the proximal end of the mandible and the width at about the mid-point. The length was taken without including the pointed tip on the base of the intermandibular membrane, nor the extension of the patch, which runs into the blackish collar.

Since there is little else in the morphology of the bird to suggest *A. formosa* ancestry, and the significance of the extensive black patch is obviously open to other interpretations, in view of Kuroda's findings, so we hold the view that *A. formosa* can be excluded from having any share in the parentage.

(b) *Upperparts:* The lower neck and mantle are finely vermiculated grey and white, extending to the rump and show no resemblance to the Baikal Teal.

A close examination of the innermost long tertials shows a similar pattern to that of the Pintail, but includes a medial white stripe as seen in both species. In the Baikal Teal this feather has a moderately broad pale lateral chestnut border. The longest of the tertials are clearly intermediate, being predominantly grey, as in the Teal, but also showing a thin black shaft stripe which is patently derived from Pintail. The upper tail coverts are intermediate between Pintail and Teal and the central pair are elongated to form a well marked 'pin' of 14 mm. in length beyond the longest tail feathers; these are dark grey in colour.

(c) *Underparts:* these are basically white, although the tips are yellowish (presumably peat staining). The lower neck and breast show slight obscured spotting as in many Teal.

Flanks are finely vermiculated grey and white and there is a slight yellowish border on either side, embracing the root of the tail. The tail coverts are intermediate between the two species.

(d) *Wings:* basically the wing pattern resembles Teal, with uniform grey wing-coverts and a bright metallic green speculum, with a broad bright chestnut anterior border, and a narrow whitish posterior border. The under surface of the wings clearly resembles that of the two parents.

(e) Measurements: (in mm.)

♂ *Anas acuta* (weight 1064g)	♂ *Hybrid* (weight 581g)	♂ *A. crecca* (weight 338g)
W=254–287	233 (chord)	175–192
Culmen=48–59	44	34–38
Tarsus=39–44	32	27–30
Tail=172–209	93	62–72
(after Delacour, 1956, 131)		(after Delacour, 1956, 99)

DISCUSSION

In the original reference, Glover (1938) describes shooting an unusual duck on the Mirgund Reserve in the main Kashmir Valley: it was flying with

Teal and weighed 1lb. 4oz. when shot. The specimen was skinned by Mr. F. Ludlow, and was sent to the British Museum (Natural History) for identificaiton, where it was determined as a cross between a Teal, *Anas crecca* and a Baikal Teal, *A. formosa*. No details were given as to the characters which led to this decision.

This specimen should be compared with the plate (Pl. XX) in *Nicoll's Birds of Egypt* (Meinertzhagen, 1930), of a wild-shot hybrid Pintail × Teal from Ghatta, in the Egyptian delta, on 26th January, 1923, and now in the Giza Zoological Museum. This, incidentally, was also originally identified as a hybrid Teal × Baikal Teal. The late Lord Rothschild, however, expressed the opinion that it was more likely to be a cross between a Pintail and Teal.

The specimen from Kashmir agrees fundamentally with the coloured illustration (by the late George Lodge) referred to above. The slight differences are firstly that the facial bimaculation in the Egyptian specimen is complete and the cheek patches are paler. This pattern was no doubt responsible for the misidentification as to the Baikal Teal parentage. At that time of course it had not been realised that this basic bimaculated facial pattern does occur in other hybrids of the Anatidae. Secondly, the breast spotting is more defined in the Egyptian specimen. This degree of variation in the bimaculated facial pattern has been shown to occur in hybrids between the Wigeon, *A. penelope* and the Shoveler, *A. clypeata* (Harrison, 1964).

SUMMARY

A hybrid duck from Kashmir has been re-examined and its parentage is considered to be Pintail × Teal, rather than Teal × Baikal Teal as originally recorded. This view is supported by comparison with a plate showing a Pintail × Teal from Egypt.

ACKNOWLEDGMENTS

We acknowledge with gratitude the loan of the Kashmir hybrid specimen by Mr. J. D. Macdonald, formerly in charge of the Bird Room, British Museum (Natural History).

For the photographs our thanks are due to Dr. Pamela Harrison, and for permission to reproduce the plate from *Nicoll's Birds of Egypt*, we acknowledge our gratitude to Dr. Theresa Clay.

References:

Delacour, J. 1956. *The Waterfowl of the World.* 2: 99 and 131.

Glover, J. W. Thompson. 1938. A Hybrid Common Teal and Baikal Teal. *Jnl. Bom. Nat. Hist. Soc.* 40: 334.

Harrison, J. M., 1964. Further Comments on Hybridisation between the European Wigeon and Northern Shoveler. *Bull. Brit. Orn. Cl.* 84: 30–39

Kuroda, N. 1937 An investigation of Variation of more than 1,000 Teal. *Tori.* 9: 273–296

Meinertzhagen, R. 1930. *Nicoll's Birds of Egypt*, 469 and Plate XX.

The original name of the bustard *Eupodotis afra*

by R. K. Brooke and R. J. Dowsett

Received 5th March, 1969

The Black Knorhaan or Bustard of the arid parts of southern Africa is called *Eupodotis afra* in the two latest Lists (White, 1965; Clancey, 1965). Both authors base their name on *Otis afra* Linnaeus 1766 *Syst. Nat.* 12th Edition I: 264. Peters (1934) points out that this name is spelt *atra:* both are Latin words meaning "black". C. W. Benson (*in litt.*) advises that the text is not well printed but that the letter used by the printer is an "f". *Otis atra* is no more than a misreading of a badly printed text and is to be regarded at the best as an unjustified emendation.

However, Linnaeus 1758 *Syst. Nat.* 10th Edition I : 155 describes *Otis afra* as "O(tis) nigra, dorso cinereo, auribus albis. Habitat in Aethiopia. I Burmannus. Maris rostrum & pedes flavi. Vertex cinereus. Alarum margo exterior albus. Femina tota cinerea, exceptis femoribus abdomineque atris.". This is a clear description of *E. afra* and mentions the most obvious distinguishing character, the white "ears" (auribus albis). It is also the wording used in the 12th Edition (C. W. Benson *in litt.*). We therefore conclude that the original description of *E. afra* is contained in Linnaeus' 10th Edition of his *Systema Naturae* in volume I on page 155 and that this reference should be cited as the original sources of the name as occasion arises. The explanation for this lapse, as for *Serinus alario* (L.) (Brooke, 1967), is probably that British ornithologists used to work from Linnaeus's 12th Edition and that when the 10th Edition was accepted as the basis of nomenclature this point was not checked.

We are obliged to C. W. Benson for consulting Linnaeus's 12th Edition on our behalf.

References:

Brooke, R. K. 1967. The original name of the Black-headed Canary *Serinus alario* (Linnaeus). *Bull. Brit. Orn. Cl.* 87 : 123–124.

Clancey, P. A. 1965. A catalogue of the birds of the South African sub-region I. *Durban Mus. Novit.* VII : 9 : 201–304.

Peters, J. L. 1934. *Check-List of the birds of the world* II. Harvard University Press : Cambridge, Mass.

White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Government Printer : Lusaka, Zambia.

Schioler's Dunlin in Eire

by Jeffery Harrison

Received 7th March, 1969

As yet, the occurrence of Schioler's Dunlin *Calidris alpina arctica*, the breeding population from north-eastern Greenland, has only been recognised in the British Isles as a passage migrant through south-eastern England, between the dates of 14th May–7th June and 7th July–17th September (Harrison and Harrison, 1967).

Although the winter quarters of this distinctive race of Dunlin are still unknown, it seemed highly unlikely that its migration route should be restricted to the eastern side of the British Isles, when it is well known that many waders from Greenland and Iceland migrate southwards to Ireland and beyond.

Between 27th September and 10th October, 1968, while in Counties Cork and Kerry, Eire, I paid special attention to this species, which was not particularly numerous, the largest party seen being forty in Co. Cork. Almost all which were seen were closely examined and seemed to be typical juveniles of the race *C. a. schinzii* with heavily spotted underparts. Only one was found which was thought in the field to be a possible Schiloer's Dunlin, a single bird on the beach at Derrymore, Co. Kerry on 4th October.

This was collected and proved to be an immature female and quite typical of the race *C. a. arctica*. The bill measured 28 mm. from the feather margin, 23.5 mm. from the nostril. This compares with measurements given by Salomonsen (1950) for ♀♀ *C. a. arctica* of 27–31 mm. compared with 30.5–35 mm. for *C. a. schinzii*, while Harrison and Harrison (*loc. cit.*) give measurements from the nostrils for four ♀♀ *C. a. arctica* of 23–24.5 mm.

The plumage characters of this bird in comparison with *C. a. schinzii*, are also quite typical of *C. a. arctica*, the margins of the mantle feathers and scapulars being white or whitish-buff; the nape is paler and the striation finer, while the underparts are particularly pale with only minimal dark spotting on the flanks and narrow pectoral striations.

This is therefore the first example of Schioler's Dunlin from Eire, and is the latest date on which one has been identified in the British Isles.

I am very grateful to my father, Dr. James Harrison, who has confirmed my identification of this specimen.

References:

Harrison, James M. and Harrison, Jeffery G. (1967). "The occurrence of Schioler's Dunlin in south-eastern England; a race new to the British Isles." *Bull. Brit. Orn. Cl.* 87 : 142–148.

Salomonsen, F. (1950). *Gronlands Fugle.* Copenhagen.

The status of the Black Noddy in the Tristan da Cunha Group

by George E. Watson

Received 20th April, 1969

Authors who have considered the avifauna of the Tristan da Cunha Group in the South Atlantic Ocean have puzzled over the status of the Black or Lesser Noddy *Anous tenuirostris* (=*A. minutus*) on Inaccessible Island. The single record comes from the Challenger Expedition which collected a nearly fledged juvenile 16th October, 1873. Not only is the date of the Challenger Expedition specimen remarkably early in the season for fledging in an otherwise tropical species, but the circumstances surrounding its capture are somewhat suspect. Furthermore, no subsequent ornithological expedition to Tristan has found the species. I have borrowed the specimen from the British Museum (reg. no. 80-11-18-720) and must reluctantly agree with Elliott (1957) that it is indeed a Black Noddy (see appendix).

The Brown or Common Noddy *Anous stolidus*, on the other hand, breeds on all three islands in the Tristan Group and on Gough Island 250 miles further south. Elsewhere the species nests almost exclusively on the ground but on Inaccessible and Gough Islands it nests regularly or exclusively in *Phylica* trees. The tree nests are constructed of twigs and leaves, while ground nests are rudimentary. Egg laying begins in mid October and hatching in mid November in the Tristan Group. The Black Noddy, which breeds on the same islands and at about the same time as the Brown Noddy throughout most of their tropical range, generally builds a substantial nest of twigs or seaweed in trees or in niches on steep cliffs.

There was no ornithologist on the Challenger Expedition, which was under the leadership of Sir Wyville Thomson, but H. N. Moseley and John Murray were general marine naturalists. Murray was in charge of the collections and according to Saunders (1877) he catalogued and labelled the specimens of gulls and terns. The expedition scientists were not aware that they had collected two species of noddies in the Atlantic Ocean until the bird collections were examined by an ornithologist four years later. Thomson (1878: 156) stated that on Inaccessible Island "the noddy (*Sterna stolida*) builds loose nests of sticks and leaves in trees". Later Moseley (1879: 123) noted that sitting on the tree tops with the thrushes were numerous noddies "of the same two species as those on St. Paul's Rocks". Earlier (page 69, footnote), speaking of St. Paul's Rocks where the expedition stopped 28th-29th August, 1873, he points out that "the two species of noddies occurring at the rocks are so nearly alike, that I did not notice at the time that there were more than one species present; a fact which I have since learnt from Mr. Howard Sanders' [sic] paper 'on the Laridae of the Expedition', Proc. Zool. Soc. 1877, pp. 797, 798. Possibly the birds, which make bracket-like nests are of one species only [*tenuirostris*], and those which build on the ground, of the other [*stolidus*]". The later narrative of the voyage (Thomson and Murray, 1885: 262) has a passage on the noddies of Inaccessible very similar to Moseley's account (and probably also written by him) but there is no hint that the naturalists were unaware during their visit that there were two species of noddy on the island.

According to Saunders' report, the Challenger Expedition collected the following noddy tern material in the Atlantic Ocean:—

St. Paul's Rocks
  Anous tenuirostris
    1 (skin) specimen, 27th August, 1873
    Adult, young in down, and egg, in alcohol
  Anous stolidus
    Egg and newly hatched chick in alcohol 28th August, 1873.

Inaccessible Island
  Anous tenuirostris
    1 (skin) specimen
    In caves and on trees, 16th October, 1873.
  Anous stolidus
    2 (skin) specimens
    Lives in caves and on trees, eyes black, 16th October, 1873.

The Inaccessible Black Noddy skin bears three labels: 1. presumably the original, an inked parchment label which reads: Noddy Tern "lives in caves and on trees"/Inaccessible Island/16th October 1873/eyes black; 2. Howard Saunders identification label; and 3. a British Museum label.

I do not know how birds were prepared and labelled on the Challenger Expedition, although presumably they were skinned in the zoological laboratory aboard ship. All of the specimens collected in the Atlantic Ocean in 1873 were packed, catalogued and landed at Cape Town, South Africa, for shipment back to England at the end of the year. I suspect that in some fashion a juvenile Black Noddy collected on St. Paul's Rocks ended up in the British Museum with an Inaccessible Island label and that speculations on a recent change of breeding range or abundance in the South Atlantic Ocean (Hagen, 1952; 8) are not justified.

APPENDIX

The adult Black Noddy is smaller, slimmer and blacker than the Brown Noddy and has a proportionately longer bill and smaller head. It also has a more extensive white area on the head, especially in juveniles; young Brown Noddies rarely have white on the head at all. The specimen in question is in juvenal plumage, however, with remiges and retrices still in growth; the bill and feet are not yet fully developed. It is therefore impossible to use absolute measurements for identification. Its forehead and crown are fully white. Foxing on old *tenuirostris* skins makes them nearly as brown as fresh *stolidus* skins, and this is the case with the 'Inaccessible' specimen. The head of the specimen and the general make-up of the skin are slim, as in *tenuirostris*, unlike even the youngest *stolidus* specimen. Because of the allometric growth in the chick period, legs and feet of noddies attain near-adult size well in advance of primary remiges and rectrices. A comparison of measurements of wing chord and tarsal length (Figure 1) shows that the Inaccessible Island specimen falls within the range of the *tenuirostris* group rather than the *stolidus* group.

I am grateful to Ian Galbraith for sending me the Inaccessible Island specimen to examine.

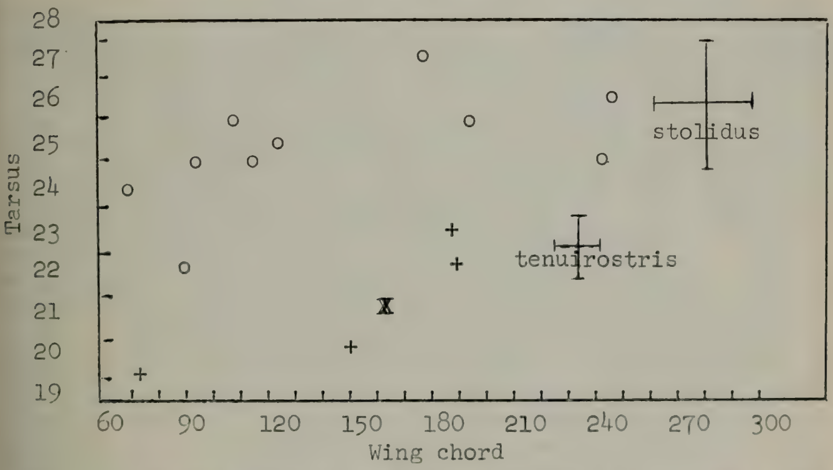


Figure 1. Comparison of tarsal and wing chord measurements in millimetres of juvenile Brown (o) and Black (+) Noddies and Inaccessible Island specimen (X). Ranges of adult measurements are shown by bars. Data are derived from specimens in the Smithsonian Institution.

References:

Elliott, H. F. I. 1957. A contribution to the ornithology of the Tristan da Cunha group. *Ibis*, 99: 545–586.

Hagen, Y. 1952. Birds of Tristan da Cunha. *Results Norwegian Sci. Exped. Tristan da Cunha*, 20.

Moseley, H. N. 1879. *Notes by a naturalist on the Challenger*. Macmillan, London.

Saunders, H. 1877. Reports on the collections of birds made during the voyage of *H.M.S. Challenger*, No. 5 on the Laridae collected during the expedition. *Proc. Zool. Soc. London:* 794–800.

Thomson, C. W. 1878. *Voyage of the Challenger*. Harper, New York, vol. 2.

Thomson, C. W. and Murray, J. 1885. *Report Sci. Res. Voyage H.M.S. Challenger* Narrative, vol. 1.

A new race of Green-headed Oriole from Southern Moçambique

by H. E. Wolters and P. A. Clancey

Received 17th February, 1969

Included in a small collection of birds recently made for the Zoologisches Museum Alexander Koenig, at Bonn, by Mr. M. O. E. Baddeley on Gorongoza Mountain, in southern Moçambique, was a single female of *Oriolus chlorocephalus*, differing from both hitherto known subspecies, *viz.*, *O. c. chlorocephalus* Shelley, 1896 and *O. c. amani* Benson, 1946 by a white alar speculum formed by bold white tipping to the primary coverts. At about the same time the Durban Museum received a larger collection from the same locality, also made by Mr. Baddeley, among which there were another six specimens (4 ♂♂, 2 ♀♀) of *Oriolus chlorocephalus*, a species not previously found south of Malawi, where the nominate race inhabits the mountains east of the Shiré valley. They agreed with the specimen at Bonn in possessing a white wing patch, and since this is the most prominent character of the Gorongoza population of the Green-headed Oriole, we propose for it the name

Oriolus chlorocephalus speculifer, subsp. nov.

Type: ♀ ad., Gorongoza Mountain, Moçambique, 3,700 ft., in temperate forest, coll. by M. O. E. Baddeley, 25th October, 1968; Zool. Museum Alexander Koenig, Bonn, W. Germany, Reg. No. 68.2695. Wing 134 mm., tail 105, culmen 25, tarsus 26 mm.

Paratypes: 4 ♂♂, Durban Museum, Durban, South Africa, Reg. Nos. 24675, 24676, 24677, 24678; 2 ♀♀, Nos. 24680, 24681; all collected by M. O. E. Baddeley on Gorongoza Mountain, at 3,700 ft., 21st–24th October, 1968.

Diagnosis: Similar to *Oriolus chlorocephalus chlorocephalus* Shelley, 1896 and to *O. c. amani* Benson, 1946, but at once distinguished by a white alar speculum, formed by the distal parts of both webs of the inner (5th to 7th, numbered in ascending sequence) primary-coverts, which are white, as are the distal part of the inner web and the edge of the tip of the outer web of the 4th covert. Outer webs of inner primaries and outer secondaries finely edged with white towards and round their tips. On the average larger than *O. c. chlorocephalus* and decidedly larger than *O. c. amani:* wing of four males 138, 138, 142, 144 (av. 140.5) mm., while, according to Benson (1946) the nominate subspecies measures 133–141 (av. 136.3) mm. in six males; *O. c. amani* 123–134 mm. in eight males. Our three females have a wing-length of respectively 133.5, 133.5, 134 (av. 133.7) mm.; females of *O. c. chlorocephalus* measure 129–132 (av. of five specimens 130.4) mm., those of *O. c. amani* 123–126 mm.

Material examined: 1 ♀ (type), Museum Alexander Koenig, Bonn; 4 ♂♂, 2 ♀♀ (paratypes), Durban Museum; all from Gorongoza Mountain, 3,700 ft. 4 ♂♂ of *O. c. amani*, from Uluguru Mts., Tanzania, Museum Alexander Koenig (wing 127.5–130 mm.).

Distribution: Only known from Gorongoza Mountain, Manica e Sofala, Moçambique. As shown by da Rosa Pinto (1959), the relationships of the avifauna of this mountain are with the mountains of northern Moçambique rather than with the surrounding highlands, and *Oriolus chlorocephalus speculifer* may be regarded as another example indicative of such avifaunal connections from across the Zambezi. On the other hand, it may well be that the new subspecies will be found in other forests on high ground in western Moçambique and perhaps in eastern Rhodesia.

Remarks: The gonads of three of the four males collected were well enlarged and two females showed an incubation spot.

References:
Benson, C. W. 1946. Two New Races of Larks from Southern Abyssinia, and a New Race of Green-headed Oriole from Tanganyika Territory. *Bull. Brit. Orn. Cl.* 67 : 25–28.
da Rosa Pinto, A. A. 1959. Um esbôco da avifauna sedentária da região da Gorongoza, Mocambique. Proc. First Pan-African Orn. Congr., *Ostrich*, Suppl. no. 3 : 98–125.

Corvus frugilegus Linnaeus with fourteen rectrices

by R. E. Scott

Received 23rd June 1969

Birds with additional rectrices are occasionally described in the literature (e.g. De Roo, 1967) and it seems worth placing on record an example of a passerine with 14 tail feathers as opposed to the normal 12.

On 14th June, 1968, Mr. E. Carpenter trapped six adult Rooks *Corvus frugilegus* at Lydd, Kent for ringing by the Dungeness Bird Observatory. In addition to ringing, each bird was checked for moult on the remiges and rectrices; and although no moult was recorded, one individual was discoverd to have 14 tail feathers. Although apparently normal in all other respects of structure, the bird's tail consisted of seven pairs of feathers, the extra feathers being the outermost and markedly shorter than the penultimate.

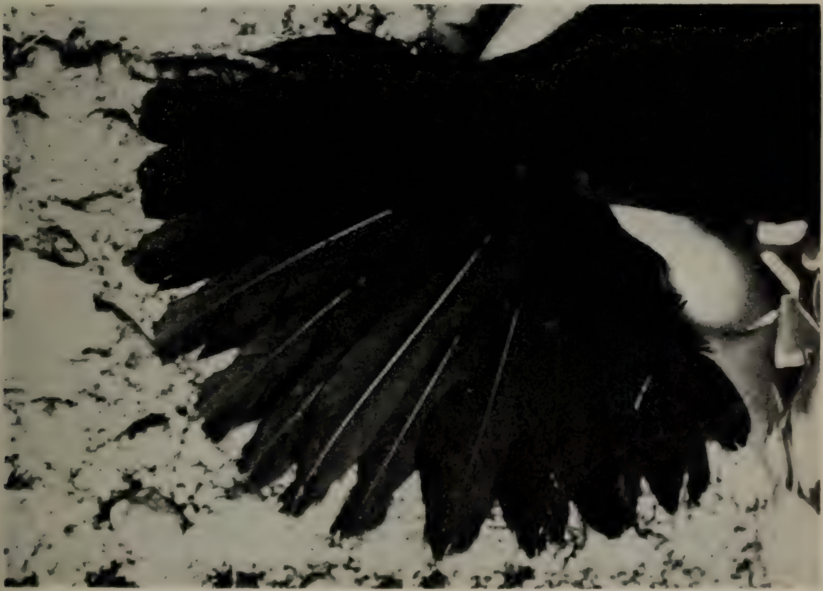


Photo: R. E. Scott

Rook with fourteen rectrices

Reference:
De Roo, A. 1967. A Swift, *Apus a. apus*, with twelve rectrices. *Bull. Brit. Orn. Cl.* 87: 141–142.

Some further records from the North Atlantic islands

by D. A. Bannerman

Received 28th May, 1969

Further to the notes in *Bull. Brit. Orn. Cl.* 89, 1969: 86-88, a letter has been received dated 12th May, 1969 from my friend Colonel Agostinho in Angra, Terceira, mentioning several interesting records from the Azores, outstanding among which is confirmation that peregrine falcons of some race (*Falco peregrinus* subsp.) visit this distant archipelago from time to time. In *Birds of Atlantic Islands*, Vol. 3, p. 246, we gave a sight record by W. R. Ogilvie-Grant of a peregrine falcon in Sao Miguel, but the record has never until now been confirmed. Agostinho has a reliable correspondent in Corvo (see *op. cit.*, p. 54), by name Sr. Fernando Rocha, well versed in the birds of that island. He has recorded that from January until March of this year a peregrine falcon was seen several times in Corvo island attacking the rock-doves *Columba livia atlantis*. His description left no doubt as to the bird's specific identification.

By coincidence another letter reached me from the Azores bearing the same date, 12th May, 1969, from the Director of the Museum at Ponta Delgada, in which the writer, Sr. Alvares Cabral, records watching on 16th and 17th January, 1969, and again on 27th and 28th February, an American Pied-billed Grebe *Podilymbus podiceps* with a party of seven coots *Fulica atra* at Lagoa das Sete Cidades, Sao Miguel. Sr. Cabral accompanies his note with a detailed description of the diagnostic characters which he was able to observe (see *Birds of Atlantic Islands*, Vol. 3, plate 8).

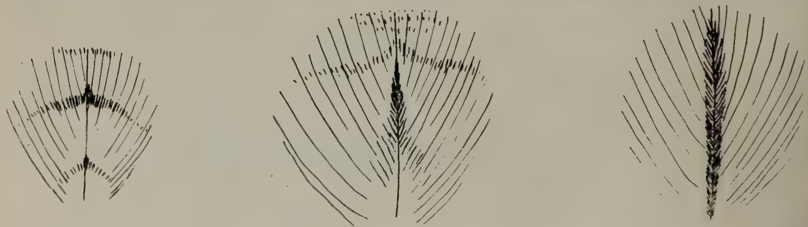
A possible hybrid *Jynx ruficollis* x *torquilla*

by M. Desfayes

Received 10th February, 1969

This note describes a specimen of wryneck collected by G. Heinrich at Kingolvina near Morogoro, Tanzania, on 4th February, 1962 (Yale Peabody Mus. No. 79298). The differences between it and the two other wrynecks are such that the bird could easily be described as a very distinct species, were it not for the fact that several characters are perfectly intermediate between the African and the Palaearctic species.

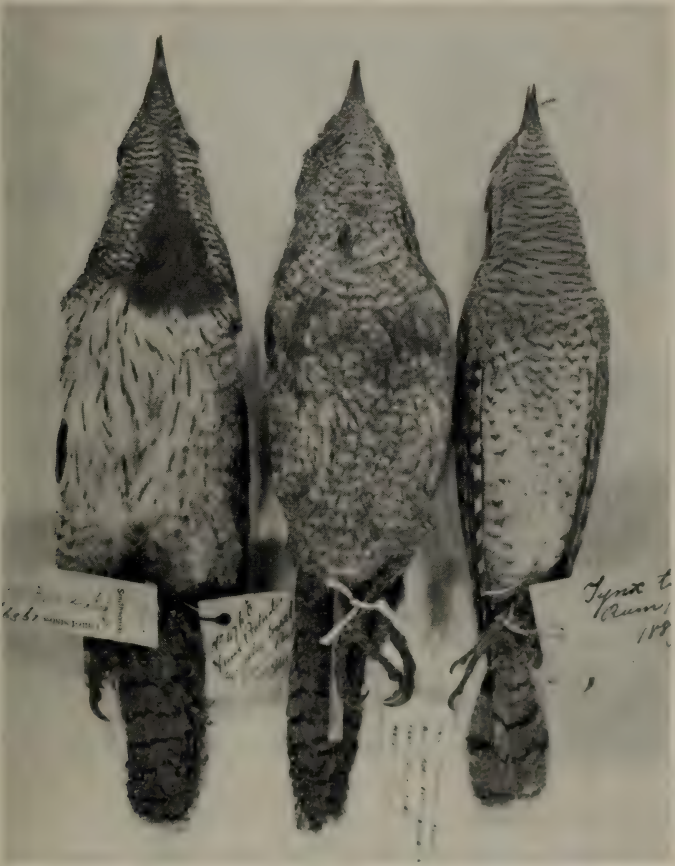
Description: Upper parts very similar to *torquilla* but more rufescent, especially on head and tail. Black on middle nape and back extensive as in *torquilla*, but black spots on wing large as in *ruficollis*. Under parts uniformly tan-coloured,



Ventral feathers of J. torquilla (left), presumed hybrid (middle) and *J. ruficollis* (right). (*c* 2½ × natural size).

lacking both the chestnut throat patch of *ruficollis* and the buff throat colour of *torquilla*. Throat very finely barred, but less distinctly than either *torquilla* or *ruficollis*. Abdomen not contrastingly different from throat as in the other two species but with arrow-shaped markings and tinged with tan as the throat. Under tail-coverts barred as in *torquilla* but more heavily so, not plain rufous with a shaft streak as in *ruficollis*.

The mixed characters are even more apparent in the details of the feathers. While *ruficollis* has a dark shaft streak and *torquilla* a transversal mark on each ventral feather, the presumed hybrid has both (see drawing). The pattern of the inner tertials is intermediate between the row of well separated spots of *ruficollis* and the continuous black design of torquilla.



Ventral view of *J. ruficollis* (left), presumed hybrid (middle) and *J. torquilla* (right).

That part of the tail projecting beyond the tip of the under tail-coverts has five dark bars as in *ruficollis*, against three in *torquilla*. The total number of well-defined bars on the tail of *ruficollis* is 10, of the hybrid 10 and of *torquilla* 5.

Colours of bare parts given as "Iris yellowish brown. Bill horn, apical third slightly infuscated. Legs and feet olive-grey".

In size and stout build this specimen is more like *ruficollis.*

Measurements: Bill damaged; stout as in *ruficollis* but not quite as wide at base. Wing 94; tail (very worn) *ca.* 67; tarsus 21 mm.

Wing formula. 1st: 8 mm. longer than primary coverts
2nd: 6 mm. shorter than third
3rd: longest
4th: 1 mm. shorter than 3rd
5th: 2 mm. shorter than 3rd

Jynx ruficollis
1st: 10 mm. longer than primary coverts
2nd: 11 mm. shorter than 3rd
3rd: 2 mm. shorter than 4th
4th: longest
5th: equal to 3rd

Jynx torquilla
1st: 6–7 mm. shorter than primary-coverts
2nd: 1–3 mm. shorter than 3rd
3rd: longest
4th: 1–2 mm. shorter than 3rd
5th: 4–6 mm. shorter than 3rd

The wing is more pointed than that of the resident *ruficollis* but less so than that of the migratory *torquilla.*

In considering the possiblity of colour dimorphism, it is of course evident that this condition would not cause any morphological change. Moreover, a colour phase is almost a matter of different colouring and does not involve several deep-seated *patterns* as in this case.

The main difficulty is to account for the presence of a hybrid in an area where heretofore only one species has been known to occur. The fact that *J. torquilla* has never been recorded south of Uganda should not preclude the possibility of hybridization. Assuming that an abnormal (hormonal imbalance?) individual of *J. torquilla* would have headed south instead of north, it is logical to believe that a strayed bird would readily mate with an individual of the resident species. Admittedly this is merely hypothesis, but I cannot find a better explanation.

My thanks go to Miss N. Halliday who has kindly done the pen drawings of feathers.

Notes on some birds of central Peru

by L. L. Short and J. J. Morony, Jr.

Received 8th April, 1969

While we were engaged in studies of woodpeckers of central Peru during July-September 1968 we observed and collected specimens of various other birds, noteworthy information about which is presented herein. The areas where we studied included the departments of Lima, Huanuco and Cerro de Pasco, extending from the Pacific Coast to the eastern slopes of the Andes. These investigations were supported by a United States National Science Foundation grant (GB-5891) to the senior author. We are grateful to Maria

Koepcke, John O'Neill, George Phillips, Edouardo Dargent and family, and Fred Kowalchuk for assistance rendered in Peru. We thank Eugene Eisenmann for suggestions benefiting this manuscript. The specimens obtained are in the collection of the American Museum of Natural History. In addition to the birds discussed more fully below, it may be noteworthy to mention our sighting of a Greater Yellowlegs (*Tringa melanoleucos*) on 22nd August at 6 km. west of the city of Cerro de Pasco. This date seems somewhat early for this sandpiper, although it has been recorded in Argentina in early September (Wetmore, 1926).

SPECIES ACCOUNTS

BLACK-BREASTED HILLSTAR. *Oreotrochilus melanogaster*, and ANDEAN HILLSTAR, *O. estella*. The very restricted range of the Black-breasted Hillstar previously was known to include only the departments of Lima and Junin. We saw several individuals at 8 km. west of the city of Cerro de Pasco on 20th-22nd August. This extends the range of the Black-breasted Hillstar north of the Peruvian altiplano into the hilly puna highlands of the Department of Cerro de Pasco. Two males were obtained from apparently adjacent territories along a rocky outcrop at an elevation of 4450 m. One specimen, preserved in formalin, weighed 8.7 gm. while the other weighed 9.5 gm. and had very small testes. The former was collected as it engaged in conflict with a male of the closely related and widespread Andean Hillstar (specimen obtained, weight 8.4 gm., testes small). In the two days prior to the conflict the Andean Hillstar was observed about a dozen times in the area immediately adjacent to that occupied by the male Black-breasted Hillstar. Their conflict took place near a rock used as a perch by the latter. Other individuals of *O. estella* were seen farther west and south along the same rocky outcrop. One Andean Hillstar male chased a female, presumably of this species, toward the senior author, who was startled when the female perched on a tiny rock ledge beside his face. The pursuing male turned aside a half meter away, hovered momentarily, and then darted off. Both species fed largely at the yellow flowers of a small, clustering hairy cactus (*Opuntia floccosa*?) that grows abundantly around rocky outcrops in the puna. The cacti and rocks were utilized by both species for perches. Andean Hillstars were noted flying out a short distance into the puna grassland, while no Black-breasted Hillstars were seen to do so. Otherwise the habits of these species seem quite similar to the extent of our limited observations.

WHITE-WINGED CINCLODES, *Cinclodes atacamensis atacamensis*. White-winged Cinclodes were encountered sporadically in the hilly upland puna of the Department of Cerro de Pasco where the species has not been recorded previously (Meyer de Schauensee, 1966: 241). This species frequented small, rocky ravines in moist puna in contrast to the ubiquitous Bar-winged Cinclodes (*C. fuscus*), which we encountered in all puna habitats. When flushed the White-winged Cinclodes flies upstream or downstream several feet above the water. It closely follows the water course and only occasionally passes over land to cut across a bend in the stream. On 24th August we obtained a female of this subspecies 35 km. north-west of the city of Cerro de Pasco at an elevation of about 4270 m. The bird weighed 54.7 gm. and had a somewhat enlarged (5 × 2 mm.) ovary.

SEASIDE CINCLODES, *Cinclodes nigrofumosus taczanowskii*. We observed and collected this remarkable cinclodes at Buhama Baja, 95 km. south of Lima in late August and early September. Each pair patrolled an area of rocky seacoast vigorously defending their territory against encroaching conspecific individuals. Most territories included a small cove and its enclosed sandy beach. Birds sought food along the beach, but they foraged mainly on the rocks very much in the manner of a Purple Sandpiper (*Erolia maritima*) following retreating waves, foraging momentarily, then darting out of the way of the next wave. All foraging that we observed occurred in the tidal zone where waves were breaking. Their food consists mainly of small crustaceans (remains of 11 in one stomach). They often cease foraging to perch briefly and preen actively, usually on a prominent rock. This frequent preening may be correlated with the considerable time they spend in the ocean spray. It would be of interest to determine whether there are any physiological-anatomical adaptations relating to the unusual habits of these birds. To further this end we secured two specimens which we preserved in alcohol for future studies. One female taken on first September weighed 66.7 gm. and had an enlarged ovary (8 × 4 mm., ova to 2 mm.). This race has brown irides, black legs and a brown bill.

SHORT-TAILED FIELD-TYRANT, *Muscigralla brevicauda*. Several individuals of this peculiar, long-legged, short-tailed flycatcher were encountered in late August at Buhama Baja south of Lima. These flycatchers walk with an unusual gait punctuated by an up-down jerking of their tail. They foraged in cultivated fields and pastures along the edge of a low, brushy woodland, occasionally venturing as far as 100 m. from the woodland border. One bird walked thrush-like, frequently bounding a foot or so into the air, apparently catching insects about weed stalks, in which several Blue-black Grassquits (*Volatinia jacarina*) were feeding. We collected one as it foraged in a lettuce patch, and another while it foraged in a well-grazed pasture. A female with a slightly enlarged ovary weighed 13.5 gm. The other specimen, preserved in alcohol, weighed 11.8 gm. Both had pale rufous irides, pale yellow legs, yellow mouth lining and the bill was brown above and pale yellow with a dusky tip below.

FORK-TAILED FLYCATCHER, *Muscivora tyrannus tyrannus*. We were surprised to encounter a Fork-tailed Flycatcher feeding in an open field at Buhama Baja, south of Lima on 31st August. This species is not known from the Department of Lima (Koepcke, 1964) or indeed from coastal Peru. We secured the bird, a female which weighed 31.5 gm., exhibited no fat and had an enlarged ovary (6 × 3 mm.), but the ova were tiny. The dark mantle, configuration of the emarginated tips of the outer primaries and pale grey colouring of the sides of its breast indicate that it represents the highly migratory southern race *M. t. tyrannus*, which breeds in Argentina. Females of this species are rather more difficult to determine, however, and we note that the bill length (from nostril) of this specimen is but 10.6 mm., whereas most females of the race *tyrannus* have bills longer than 11.0 mm. Its enlarged ovary and lack of fat suggest that it was a migrant en route south to breed, but that it wandered off course to the west of the Andes, ending up along the Peruvian coast.

RUFOUS-BACKED NEGRITO, *Lessonia rufa*. This flycatcher is locally common in the Andes, but has never been reported west of those mountains in the Department of Lima (Koepcke, 1964). On 31st August we observed an adult male Rufous-backed Negrito near the coast at Buhama Baja. Unfortunately we were unable to collect the bird, but we observed it closely and were familiar with this distinctive species. This apparently represents the first report of the species from coastal Peru.

THRUSH-LIKE WREN, *Campylorhynchus turdinus*. We secured a specimen of this wren on 17th August at 15 km. north-east of Tingo Maria in the Department of Huanuco. In his monograph of the genus *Campylorhynchus*, Selander (1964) pointed out that very little information is available concerning the Thrush-like Wren. The bird we collected was one of a pair frequenting a natural cavity 10 m. up in an isolated dead tree in a small marsh surrrounded by second growth moist subtropical forest. We were unable to determine whether the birds observed were carrying food, but this may have been the case. At any rate they persistently visited the cavity during two hours of observations. The same tree was utilized also by as many as seven individuals of the woodpecker *Melanerpes cruentatus*, occupying two active nesting cavities about 6 m. above the cavity utilized by the wrens. This was the only pair of Thrush-like Wrens observed in this area during three days of concentrated field work. Selander (*op. cit.*, p. 24) noted that the iris colour of this species was unknown; the adult we collected had pale orange-rufous irides. Its legs were dusky grey, and its bill was brown above and ivory below with ivory-coloured tomia. The specimen, preserved in alcohol, originally weighed 38.8 gm. We examined the specimen in the American Museum of Natural History several months later, and found it to be a female with a brood patch, an enlarged ovary (8 × 4.5 mm., ova to 1 mm. or more), and an enlarged (probably used) oviduct. The above observations and data from the specimen suggest that this species at least occasionally nests in natural cavities.

TIT-LIKE DACNIS, *Xenodacnis parina petersi*. Several individuals of this rare species were observed 8th-9th August at 4270 m. elevation along the Chiquian-Huallanca road 21 km. north-west of Huallanca just inside the Department of Huanuco from the border of the Department of Ancash. Two pairs foraged in low bushes on a rocky hillside in otherwise open moist puna. At the time of our visit it froze nightly and snowed in flurries each afternoon. The birds could not be observed readily because of the dense foliage of the bushes. One male was collected as it sang a rambling, warbled song. The specimen, weighing 15.4 gm., was preserved in alcohol. Approximately five individuals were observed on 10th August at 3810 m. elevation along the same road but 7 km. north-west of Huallanca. In this situation the birds foraged in bushes and small trees surrounding a grove of *Polylepis* (sp.) trees in a small valley. The slopes above the grove are covered with typical puna grasses. An adult male (weight 15.8 gm., testes 2 × 1½ mm., iris colour brown, mouth lining pale yellow, bill and legs black) was obtained as it fed at small yellow flowers in the top of a tree (species unknown) 3 m. tall. A female weighing 13.1 gm., with a small ovary and incompletely ossified skull was collected in a neighbouring bush.

References:

Koepcke, M. 1964. *Las aves de Departmento de Lima*. Lima, Peru. Gráfica: Morsom. S. A.
Meyer de Schauensee, R. 1966. *The species of birds of South America with their distribution.* Narberth, Pa. Livingston Publ. Co.
Selander, R. K. 1964. Speciation in wrens of the genus *Campyiorhynchus. Univ. of Calif. Publ. Zool.*, vol. 74, p. 24.
Wetmore, A. 1926. Observations on the birds of Argentina, Paraguay, Uruguay and Chile. *Bull . U.S. Natl. Mus.*, vol cxxxiii, p. 152.

Phylloscopus fuscatus (Blyth) in Cyprus

by John P. Hubbard

Received 14th September, 1968

On 30th September, 1967, a Dusky Warbler *Phylloscopus fuscatus fuscatus* was captured in a mist net on the Akrotiri Peninsula, approximately 8 miles south-west of Limassol (Lemesos), Cyprus. The specimen (no. 533,491 at the United States National Museum) weighed 8.0 gms. and proved on dissection to be a male with no visible fat deposits. On the basis of its incompletely ossified skull it is immature, and it is in fresh plumage.

Normally this species is confined to Asia where it breeds east of the Urals and winters in the south-eastern part of the continent (Vaurie, 1959, *Birds of the Palearctic Fauna*). It has occurred as a vagrant as far west as Britain, however, where there are four accepted records (Harber *et al.* 1966, *British Birds*, 59: 295). These are all reports of single birds in the month of October, and all but one have been since 1960. The present specimen is the first from Cyprus and perhaps the only one from the Middle Eastern areas.

This specimen was taken in conjunction with a study of bird migration in Cyprus by the Smithsonian Institution in co-operation with the British Trust for Ornithology and the Cyprus Ornithological Society, the contributions of which are most appreciated.

Little Crake Porzana parva (Scopoli) breeding in north-eastern Greece

Neither the *Handbook of British Birds* nor the *Field Guide to the Birds of Britain and Europe* includes Greece within the breeding range of the Little Crake. During a month's visit in the spring of 1968 four days were spent at Lake Koroneia, near Thessalonica, Macedonia, and Little Crakes were seen each day. On 24th April three birds were seen and a male was trapped the following day. One bird was seen on 8th May and on the 9th a female was flushed from a nest containing five eggs. Lack of time prevented more than about half of the suitable habitat being covered.

P. R. Holness, M. Cowlard,
R. Brown, A. Greensmith.

26th December, 1968

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, C. W. Benson, c/o University Museum, Department of Zoology, Downing Street, Cambridge. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Contributions should be submitted to the Editor in duplicate and should be addressed to C. W. Benson, personally.

Authors introducing a new name or describing a new series or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s*. for years up to 1968 (Vol. 88) and 7*s*. 6*d*. for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 5*s*., payable to the Hon. Treasurer, P. Tate. 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

5 71

Bulletin of the
British Ornithologists' Club

Edited by
C. W. BENSON

[illegible]
R.

Volume 89 No. 5 October 1969

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, BT., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

Prof. J. H. Elgood

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1969

25th November—Speaker: Mr. P. J. Olney. Subject: Avocets and their management. Venue: The Criterion, Piccadilly Circus, London, W.1.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 89 No. 5 Published: 20th October, 1969

NAT. HIST.
PURCHASED

The six hundredth and sixtieth meeting of the Club was held at The Criterion, Piccadilly Circus, London, W.1 on 16th September, 1969.

Chairman: Dr. F. J. Monk

Members present: 14; Guests: 4

Mr. L. Cornwallis addressed the Club on the Birds of Fars, S.W. Iran, and illustrated his address with photographic slides.

Subspecific status of the Small Skylark *Alauda gulgula* in the Philippines, with notes on age characters and moult

by Kenneth C. Parkes

Received 15th July, 1969

The skylark of the Philippine Islands was named *Alauda arvensis wolfei* by Hachisuka (1930: 215); this population belongs to the species *A. gulgula* as shown by Vaurie (1951). Hachisuka's description was somewhat confusing, and contained several errors, typographical and otherwise. Subsequent authors have generally refused to accept the validity of this subspecies. Delacour and Mayr (1946: 155) state: "The alleged race *wolfei* is not distinguishable from *watersi* [*sic* = *wattersi*]." Vaurie (1951: 516–517) also synonimized *wolfei* with *wattersi*, the subspecies of Formosa. Peters (1960: 70) listed *wolfei* with a query, adding "doubtfully distinct from *A. g. wattersi*".

Hachisuka attributed to *wolfei* a more heavily spotted breast, slightly darker back, and more reddish chestnut throat and underparts. He cautioned, however, that the last character might be due to staining from soil. Measurement comparisons were presented for an unspecified number of specimens of *wolfei* and of "*pescadorensis*" [= *pescadorei* La Touche, a synonym of *wattersi*]; these indicate a smaller average size for *wolfei*.

Vaurie's investigation was hampered in that he had available only five Philippine specimens, and in that his series from Formosa was unsexed. Hachisuka's measurements, Vaurie's of other races, and those I have taken of Philippine birds all show that females of *Alauda gulgula* average distinctly smaller than males. Sex for sex, it is clear that Philippine specimens are smaller than those from Formosa and the adjacent Pescadores. Vaurie's smallest wing measurement in his Formosa series was 85 mm., and Hachisuka's smallest female from the Pescadores measured 86 mm. On the other hand, Vaurie's one Philippine female, five now before me, and those measured by Hachisuka (number unspecified) all fall in the range of 80–84 mm. in wing length. Philippine males range from 84 to 89 mm., while Hachisuka gives 89 to 93 for "*pescadorensis*"; Vaurie's maximum for Formosa (presumably a male) was 96 mm. There is thus, at best, a slight overlap in the wing measurements of *wolfei* and *wattersi*.

Vaurie (1951 : 416) states : "The population of the Philippines appears to have shorter bills, but I have only a few specimens and in these the bill is not shorter than in the specimens from Formosa with the shorter bills." This statement, too, ignores sexual dimorphism. Four of Vaurie's five Philippine specimens were males; it is understandable that these might match in bill length the smallest (= females) of the unsexed Formosa series. I have compared a larger series (14) of Philippine birds with the Formosan specimens at the American Museum of Natural History (presumably those used by Vaurie), and it is immediately apparent that the Philippine birds average shorter-billed. If the Formosan series could be segregated by sex, there would probably be little overlap, as is true of wing length.

After discussing bill length, Vaurie goes on to say that "the Philippine and Formosan populations are otherwise identical." I have examined a total of 19 Philippine specimens, mostly in fresh, unstained plumage, only five of which were seen by Vaurie. Formosan specimens, when compared with Philippine, are less rufous and of a generally colder tone dorsally, even in worn plumage. The ventral streaking mentioned by Hachisuka is too variable to be useful; not having seen Hachisuka's specimens, I cannot comment on the possible ventral staining he mentions. An additional character, not used by earlier authors, involves the second outermost rectrix. In 14 of 17 Formosan *wattersi*, the white on this feather is confined to the outer web. In 16 of 19 Philippine specimens, a varying portion of the tip of the inner web of this rectrix is also white.

The combined differences in size, dorsal coloration, and rectrix pattern appear amply sufficient to justify the recognition of *Alauda gulgula wolfei* Hachisuka as the resident subspecies of skylark in the Philippines.

Vaurie (1951 : 447) includes *Alauda gulgula* among those larks with a complete "postjuvenal" (= first prebasic) moult, after which "the first winter bird cannot be distinguished from the adult". I collected four examples of this species in central Luzon, Philippines, in August and September, 1956. Two males and one female had completely ossified skulls, and were considered to be "adults". A second female, collected at Ternate, Cavite Province, 24th August, with the adult female, had an incompletely ossified skull and a clear (as opposed to granular in the adult) ovary, and was considered to be a bird of the year. The crest feathers of the latter bird are distinctly shorter and blunter than are those of the adult. This character must be used with caution, however, as specimens examined suggest that here, too, there may be a sexual dimorphism, with males having, on the average, somewhat longer crest feathers than females.

Vaurie (1951 : 510) had information on moulting periods of Asiatic *Alauda arvensis* and *A. gulgula* only from high altitude or strongly migratory populations. He stated : "It is possible that in the forms from southern and semitropical latitudes the complete postnuptial molt takes place at other times of the year." In the Carnegie Museum series from central Luzon, two 24th August specimens are just completing the prebasic moult, while specimens taken 28th and 30th (2) August, and 7th (2), 13th and 26th September have all completed this moult. A 23rd July specimen from southern Luzon was described by Meyer de Schauensee (1957 : 8) as being "in fresh body plumage, the tail has completely moulted and is just beginning to grow in again; the primaries are being renewed." These dates agree well with those given by Vaurie for Kashmir, Tian Shan, and northern Afghanistan, and indicate a moulting period slightly earlier than that typical of most populations he sampled (early August to late September or early October). The first-year and the adult female taken 24th August are in almost identical stages of moult; neither had yet lost the two outermost primaries, and the third outermost was growing in the young bird, fully grown in the adult.

ACKNOWLEDGMENTS

My 1956 Luzon specimens were collected during a project of the Graduate School of Public Health, University of Pittsburgh, under the sponsorship of the Commission on Viral Infections, Armed Forces Epidemiological Board, supported in part by the Office of the Surgeon General, U.S. Department of the Army. I am indebted to Mr. Telesforo Oane of the National Museum of the Philippines, who acted as my field assistant. Specimens at the American Museum of Natural History were utilized through the courtesy of Dr. Dean Amadon.

References:
Delacour, J. and Mayr, E. 1946. *Birds of the Philippines*. New York: Macmillan.
Hachisuka, M. 1930. Contributions to the birds of the Philippines. No. II, part VI. *Ornith. Soc. Japan Suppl. Publ.* no. 14: 141–222.
Meyer de Schauensee, R. 1957. Notes on Philippine birds. *Notulae Naturae*, no. 303: 12 pp.
Peters, J. L. 1960. Family Alaudidae. In *Check-list of birds of the world*, vol. 9, ed. by E. Mayr and J. C. Greenway, Jr. Cambridge, Mass.: Museum of Comparative Zoology.
Vaurie, C. 1951. A study of Asiatic larks. *Bull. Amer. Mus. Nat. Hist.*, 97: 431–526.

The Buff-spotted Flufftail *Sarothrura elegans* in Ethiopia

by F. Roux and C. W. Benson

Received 16th July, 1969

The only previous record which we can trace of the occurrence of *Sarothrura elegans* (Smith) in Ethiopia is a sound record from juniper woods at Mega, near the border with Kenya, on 4th June (Benson, *Ibis*, 1947: 49). There is however a female specimen in the British Museum (Natural History), from an altitude of only 700 feet in the Wagar Mountains, Somalia (Archer & Godman, 1937: 334), at 10° 00′ N., 45° 20′ E., collected on 30th May, 1905.

During the recent expedition from the Muséum National d'Histoire Naturelle, Paris, to Ethiopia, an adult male of this species was collected at Koffole, between Shashamane and Dodola, at 7° 05′ N., 38° 45′ E., and altitude 2,200 metres (7,200 feet), on 14th April, 1968. It was caught in a cage for the trapping of rodents, in the undergrowth of a degraded *Podocarpus* forest. It had testes slightly enlarged, measuring 6 × 3.5, 4.5 × 3 mm.

From a personal examination of over 60 specimens in various museums, Keith *et al.* (in press) have been able to recognise two subspecies, namely *S. e. elegans*, ranging from eastern Kenya and Tanzania southward to the eastern Cape Province, and *S. e. reichenovi* (Sharpe, *Cat. birds Brit. Mus.* 23, 1894: 121), ranging from northern Angola, the Congo, Uganda and the southern Sudan, westward to Nigeria, Fernando Poo and Liberia. They could only be certainly distinguished by a difference in adult males. In those of *reichenovi* the spotting both above and below is larger and coarser. They also tend to be darker above, though this difference is less definite. There is no marked variation in measurements, but both sexes of *reichenovi* from Cameroun westward have on average shorter bills.

Keith *et al.* duly examined the female from the Wagar Mountains, Somalia.

It is the type of *S. buryi* Ogilvie-Grant (*Bull. Brit. Orn. Cl.* 21, 1908: 93). It was not found to be in any way distinctive. Considerable individual variation in colour, unrelated to geography, was noted. The Somalia specimen, although relatively pale, was no more so than two from Durban, Natal. So *S. buryi* was provisionally considered a synonym of nominate *elegans*.

A comparison of the Ethiopian male with other adult males in the British Museum (Natural History) indicated that it also is best placed with nominate *elegans*. On the upperside it agrees well with seven males from Natal and the eastern Cape Province, one from Malawi, and two from Tanzania (Pemba Island), rather than with five of *reichenovi* from Cameroun and one from the southern Sudan. Actually on the underside the specimens from Malawi, Tanzania and Ethiopia are somewhat more coarse-spotted than in those from South Africa. Possibly to this extent, in eastern tropical Africa there is some intergradation between the two subspecies. Compared to other males, the Ethiopian one is a relatively rich chestnut on the throat and chest, but not more so than these others on the crown, nape and sides of head, and this slight difference does not seem significant.

Measurements (in millimetres) of the Ethiopian specimen are:—wing 93, culmen (from base of skull) 15, tarsus 26, middle toe with claw 29. These figures are not significantly different from a long series provided by Keith *et al. Inter alia* they give the following figures for South African material:—

	12♂♂	3♀♀
Wing	84–93 (88.8)	88, 89, 91
Culmen	15.5–17.5 (16.4)	15, 15, 17
Tarsus	22–25 (23.7)	23.5, 24, 24.5
Middle toe	26–30 (27.9)	28.5, 28.5, 30

References:

Archer, G. F. and Godman, E. M. 1937. *The birds of British Somaliland and the Gulf of Aden.* 2. London.

Keith, G. S., Benson, C. W. and Irwin, M. P. Stuart. In press. The genus *Sarothrura* (class Aves, family Rallidae). *Bull. Amer. Mus. Nat. Hist.*

A Record of *Oceanodroma leucorhoa* from Kenya

by B. T. Parsons

Received 10th July, 1969

On 8th February, 1969, I found the remains of a small petrel on the beach near the mouth of the Tiwi (Mwachema) River, Kwale District, S. E. Kenya (4° 15′ S., 39° 35′ E). It was being devoured by Ghost Crabs but sufficient of the head, wings, tail and one foot remained for me to identify it provisionally as a Leach's Petrel, *Oceanodroma leucorhoa* (Vieillot); the bird was sooty black with blackish bill, tarsus and webs and there were white feathers on the rump. The measurements were:

Wing (outer three primaries much worn)	158 mm
Tarsus	25 mm
Bill from skull	19 mm
Outer tail feathers	85 mm
Inner tail feathers	67 mm
Depth of fork	18 mm

All these measurements are within the ranges given by Witherby *et al.* 1943 except that this work gives the bill length from feathers (15–16.5 mm). Dr.

D. W. Snow, British Museum, Natural History, very kindly confirmed the identification. The remains of the specimen have been retained there.

Mackworth-Praed and Grant (1957) imply that this species may occur on the East African Coast but White (1965) gives no records although he states 'Records from Red Sea require confirmation'. The present record would appear to be the first for the species in Kenya and tropical East Africa.

I am grateful to Mr. G. C. Backhurst for assistance in preparing this note.

References:
Mackworth-Praed, C. W. & Grant, C. H. B. 1957. *Birds of Eastern & North Eastern Africa.* Vol. i. London, Longmans.
White, C. M. N., 1965. *A revised check list of African Non-Passerine Birds.* Lusaka, Government Printer.
Witherby, H. F. *et al.* 1943. *The Handbook of British Birds.* Vol. iv. London, Witherby.

A Record of *Calidris subminuta* from Kenya

by G. C. Backhurst and P. L. Britton

Received 5th August, 1969

On 27th April, 1969, while netting birds for ringing at a small marsh north of Lake Naivasha, Rift Valley, Kenya (*c* 0° 45′ S., 36° 25′ E.) we caught a dark-coloured stint which we suspected was *C. subminuta* Middendorff. However, as we were not familiar with either this, or other far-eastern and American species, we collected it.

The measurements were:—

weight	27.7g	middle toe and claw	24mm.
bill from feathers	19.5mm.	sex	♀
wing	94mm.	ovary	7 × 4mm.

The skull was not fully ossified; the bill was dusky with the basal half of the lower mandible dusky yellow, the tarsus and toes were also dusky yellow, and the iris was black. P. R. Colston of the British Museum (Natural History) kindly confirmed our identification. The skin is now in the National (formerly Coryndon) Museum, Nairobi.

This record is the first for Kenya and apparently the second for Africa, the first having been obtained by L. Broberg on 6th January, 1964 at Lake Abyata, Ethiopia (*Ibis*, 1967: 440). P. R. Colston informs us (personal communication) that there are recent unpublished records of the species in Aden.

Bird observations from the Dahlak Archipelago, Ethiopia

by Emil K. Urban and Jeffery Boswall

Received 28th June, 1969

The birds of the Dahlak Archipelago, Ethiopia, have been reported on by Heuglin (1859) and more recently by Salvadori (1954), Smith (1955, 1957), Clapham (1964) and Tornielli (1964). Incidental comments on birds of these Red Sea Islands have also been made by Roghi and Baschier (1956) and the Israeli Red Sea Expeditions March–April, 1962 (Oren, 1962) and October–November 1965 (Lewinson and Fishelson, 1967). Some of the observations made on birds on the two expeditions by Aryeh Aboulafia and personally communicated to J. B. are included in this paper. Despite these previous papers, information on birds of the archipelago is limited. To add to the knowledge of the avifauna of the Dahlaks, we present here our observations made between 18th–25th March, 1969.

We express our appreciation and thanks to Mr. F. Minot of the African Wildlife Leadership Foundation, Major J. Bromley of the Imperial Ethiopian Government Wild life Conservation Department, and the Imperial Ethiopian Navy for their support, making our stay in the Dahlaks possible. An earlier draft of this paper was submitted to Kenneth D. Smith, who made most valuable suggestions for its improvement; similarly Christopher Clapham.

The Dahlak Archipelago includes a group of several hundred islands, covering an area of about 200 square kilometres, off the Red Sea coast of Ethiopia near Massawa. We were able to reach only a few of the islands, mainly in the south. Most of our time was spent exploring Sciumma Island (alternative spelling: Shumma) (15° 32′ N., 40° E) although we made short visits, lasting not more than a few hours, to Disei Island (in the Gulf of Zula), Assarca (Assarka) Islands (two islands about 10 kilometres west of Sciumma), Ito Umm Narus (Umm Namus) Island (15 km. south of Sciumma) and the southern coast of Dahlak Island in the vicinity of the fishing village, Dahlak Kebir. The alternative spellings are those on the British Admiralty Chart: 'Africa—East Coast. Red Sea, Massawa Channel. No. 164'. First published in 1878, but with latest small corrections in 1967, this chart is extremely useful and covers almost all the islands in the archipelago.

The vegetation of the islands varies from open grassland and occasional acacia scrub (Sciumma, Disei, Dahlak, Assarca) to mangrove and euphorbia thickets (Sciumma, Assarca, Ito Umm Narus). We were able to confirm the appropriateness of the name Umm Narus, which means 'Mother of all mosquitoes' (Smith 1951: 228).

Tides of about one metre expose mudflats and sandy beaches, sometimes fairly extensive. Rocky coral cliffs, five to ten metres high, provide further habitats. Disei has many hills and is similar to the mainland; the other islands we visited are comparatively flat. During the period we were there, the temperature was warm, cooling off at night. Winds varied from south-easterly to northerly or north-easterly; the northern ones, for the Dahlak Islands, cooled temperatures. We did not record specific climatic data during our stay; however, the climate as well as vegetation of the Dahlaks are discussed in greater length by Smith (1955) and Clapham (1964).

Any ornithologist visiting the islands in the future would be well-advised to have a copy of the local 'Pilot' with him. The description of the islands, though limited, might help him to make a better-informed choice. They mention such features as mangrove swamps.

In the following accounts of species, we have indicated the relative abundance in the same way as have Urban and Brown (Checklist of the birds of Ethiopia, in manuscript). A species is 'abundant' when it is seen or heard any day in its preferred habitat in fair to large numbers: 'common' when a few are seen or heard almost any day in the preferred habitat; 'frequent' when it is quite often seen or heard but special effort is necessary to see it; 'uncommon' when it is seldom seen, perhaps ten times per year in preferred habitats; 'rare' very seldom seen or heard, less than once per year; and 'vagrant', only a few records exist for the area. Since we were in the Dahlak Archipelago for only a short period of time, it is impossible to state that a species we saw is 'rare' or 'vagrant'; hence, we have not in fact used these two categories. Furthermore, if we saw a species only once or twice, we considered it 'uncommon'. No mention of breeding in the accounts below indicates we saw no evidence of it.

Phaethon aethereus. Frequent. We saw two Red-billed Tropicbirds on 20th March and one on 22nd March along the coral reefs of Sciumma Island.

Sula leucogaster. Common. On the exposed coral reefs of Disei, on 18th March, we saw over 100 Brown Boobies. Subsequently, individual boobies were usually seen at the other islands, ordinarily flying over water. Aboulafia states that about 23 pairs were nesting on Museri in October-November, and it is worth quoting Lewinsohn and Fishelson (1967): ' . . . *Sula leucogaster* was in the peak of reproductive activity, exhibiting the full sequence of nest building, egg-laying, incubation and hatching. Such late breeding may possibly be linked with the fact that sizeable concentrations of sardines (*Harengula punctata*) make their appearance in the region towards the end of October and no doubt provide the Brown Boobies with an abundance of food.'

Pelecanus rufescens. Frequent. We observed Pink-backed Pelicans only at Sciumma, seeing single individuals on 19th and 22nd March and five on the 20th. Clapham (1964) says 'present . . . but not breeding', Smith (1957) states 'Resident in mangrove swamps, islands'; it is thus of interest to quote Aboulafia (*pers. comm.*) who states that they nest on a small islet off Musero.

Ardea goliath. Frequent. Single Goliath Herons were seen on Sciumma on 18th, 19th and 20th March and on Ito Umm Narus on 22nd March, and three, each by itself, on the two Assarca Islands on 21st March.

Egretta schistacea. Abundant. The Reef Heron was noted on all islands visited, several often seen at one time. The species was especially common on Sciumma, roosting in the mangrove swamps there.

Butorides striatus. Common. Two or more individuals of the Red Sea form of the Green-backed Heron were seen regularly among crevices in rocks, exposed coral reefs and in mangrove swamps of most of the islands visited. It was not, however, seen at Dahlak Kabir or Ito Umm Narus.

Ciconia (*Sphenorhynchus*) *abdimii*. Frequent. Three Abdim's Storks were seen soaring with Black Kites high over Assarca Island on 21st March. A short time before sunset on 20th March six were observed roosting on nests on Sciumma. Since all were off the nests the next day, they were apparently not breeding. On 23rd March three were seen on Sciumma, away from the nest site. Tornielli (1964) gives what appears to be the first definite breeding record for the islands. He photographed a nest with rather small young in the first week of March.

Platalea alba. Uncommon. One African Spoonbill was seen on a sandy intertidal area of Sciumma on 20th March.

Platalea leucorodia. Frequent. Four European Spoonbills on 21st and two on 24th March were noted on Sciumma.

Neophron percnopterus. Uncommon. On Sciumma on 24th March an Egyptian Vulture was seen at its nest with one egg. The nest was in a hole on a small cliff above high tide line. No other vultures were seen on any of the islands during our stay.

Falco biarmicus. Frequent. Single Lanners were spotted at Sciumma on 19th and 20th March; on the 24th, two were seen there.

Falco concolor. Frequent. Single Sooty Falcons were seen on Sciumma on 18th and 20th March. On 21st March, on the Assarca island without a lighthouse, a falcon almost certainly this species captured a Pink-headed Dove

Streptopelia decaocto in mid-air. This observation adds another species, a large one, to the diet of the Sooty Falcon as described by Clapham (1964). The presence of birds in March is interesting since the species is a migrant and yet does not lay its eggs until July or August (Clapham 1964). Salvadori (1954) found only a single bird on Disei at the end of March, though he otherwise visited only the Nocra group of islands. Moreau (1969) pointed out, however, that Ennion's January records from Oman show that not all Sooty Falcons migrate. Also, the closely related species, Eleonora's Falcon *Falco eleonorae*, which also nests late, mid-July to October, returns to its nesting areas as early as April (Vaughan 1961). Aboulafia (*pers. comm.*) does not say whether or not he saw the species on his March–April expedition, but on Museri Island in October–November he saw the birds 'in their tens flying in the late afternoon above the mangroves apparently catching insects and even trying a *Pipistrellus*. One I saw attacking a Kentish Plover *Charadrius alexandrinus*'.

Falco tinnunculus. Uncommon. The migrant Kestrel *F. t. tinnunculus* was seen twice on Sciumma, on 21st and 23rd March.

Milvus migrans. Abundant. Several Black Kites *M. m. migrans* were seen daily at Sciumma and, except for Ito Umm Narus, at the other islands visited. On 21st March off the western tip of Assarca (with the lighthouse) some 300 kites were seen soaring high in the air. (*N.B.* Although Sheikh Said [Green Island] offshore from Massawa is not part of the Dahlak Islands, our observations on this species there are of interest for they confirm Clapham's [1964] observation that the species roosts on this island. Between 18.00 and 19.00 on 17th March we saw at least 50 kites on the north-east corner among the mangroves, some getting there by first spiralling from the mainland to gain height and then gliding out to the islands, others by simply striking out over the sea in level flight).

Elanus caeruleus. Uncommon. Two Black-shouldered Kites were seen on Sciumma on 23rd March.

Circus sp. Uncommon. A single brown harrier, either *C. pygargus* or *C. macrourus*, was seen on Sciumma on 23rd March.

Pandion haliætus. Common. Two to five Ospreys were regularly seen on the islands. On Ito Umm Narus, one Osprey was seen flying onto a nest; however, the contents of the nest were not ascertained.

Ardeotis arabs. Frequent. On Sciumma in the open grassland one Arabian Bustard was seen on 19th March and three on the 20th.

Charadrius hiaticula. Common. The Ringed Plover was regularly seen feeding at Sciumma on 19th–22nd March. Although exact counts were not made, one would usually see five to ten individuals at a time.

Charadrius dubius. Frequent. In the late afternoon of 23rd March five Little Ringed Plovers were spotted along the shore of Sciumma.

Charadrius alexandrinus. Frequent. Two Kentish Plovers were recorded on the south coast of Dahlak Island on 21st March. On 19th March a flock of about ten plovers, probably this species, was seen on the beach at Sciumma.

Charadrius leschenaultii. Common. Flocks of ten or more Great Sand Plovers were noted on Sciumma on 19th March; five individuals were seen on Dahlak Island on the 21st.

Charadrius squatarola. Frequent. Single Grey Plovers were seen on Sciumma and Ito Umm Narus on 22nd March, and two on Dahlak Island on the 21st.

Haematopus ostralegus. Uncommon. One Oystercatcher was seen on Sciumma on 20th March.

Calidris testacea. Common. More than 20 Curlew Sandpipers were recorded on Dahlak Island on 21st March, and single individuals on Sciumma on 19th and 20th.

Crocethia alba. Uncommon. Two Sanderlings were seen on Sciumma on 21st March.

Arenaria interpres. Common. Once, on 23rd March, a flock of 10–15 Turnstones was seen on Sciumma; five were seen on Ito Umm Narus on 22nd March. Single individuals were also recorded on Sciumma on 19th and 21st March.

Xenus cinereus. Frequent. Five to ten Terek Sandpipers were seen on Dahlak Island on 21st March and a single one on Sciumma on 20th.

Tringa hypoleucos. Frequent. Single Common Sandpipers were observed on 19th and 20th March and about ten on 21st, all on Sciumma.

Tringa totanus. Common. Redshanks were heard and seen daily at Sciumma; often ten or more would be seen. On 21st March, over ten were counted on Dahlak Island. This species was one of the commonest shorebirds in the archipelago.

Tringa nebularia. Uncommon. Single Greenshanks were recorded on Sciumma on 19th and 21st March.

Limosa lapponica. Common. Bar-tailed Godwits were regularly seen during our stay. Approximately 20 were recorded on Sciumma on 19th March and on Dahlak on the 21st.

Numenius arquata. Uncommon. Single Curlews were heard on Sciumma on 18th and 19th March.

Numenius phaeopus. Frequent. One Whimbrel was seen on 19th March and five on the 20th, all on Sciumma.

Dromas ardeola. Abundant. Flocks of 20–30 Crab Plovers were regularly seen along the shorelines of the islands visited. Flying juveniles were seen soliciting food and adults feeding them in at least four instances. Clapham (1964) recorded juvenile Crab Plovers soliciting food in mid-August and Smith (1957) in March. Smith tells us that his November record (xi) is a misprint for June (vi). Although no nests of this species have yet been found in the area (Smith, 1957), it seems likely that it breeds in the Dahlaks in January–February, and June–July, or from January to July. Caution is however necessary in drawing conclusions as to breeding seasons, from the feeding of fledged young, since the period of parental care is not known.

(M. J. Penny informs me that on Aldabra Crab Plovers are only numerous between October and March. There is no evidence that they breed there or anywhere else south of the equator, even though on Aldabra juveniles have been seen soliciting food during this period. Perhaps the season in the Dahlaks is the same as on the coast of Somalia, where highly incubated eggs have been found in July (Archer & Godman, *Bds. Brit. Somaliland* 2, 1937: 496).—ED.

Larus fuscus. Abundant. Flocks of 80 or more Lesser Black-backed Gulls were recorded on 17th, 18th, and 25th March between the Dahlak Archipelago and Massawa. Although specific counts were not made, several of these gulls were seen at the islands visited.

Larus leucophthalmus. Abundant. The White-eyed Gull was noted daily on the islands. One flock of about 50 was recorded on Ito Umm Narus on 22nd March and on 25th March, and when we returned to Massawa from Sciumma, 100 were seen. Usually 10–20 were seen at one time; several in non-breeding or immature plumage were observed.

Larus hemprichii. Common. The Sooty Gull was not usually seen so often as the White-eyed Gull although it was recordeed on all islands. However, about 100 individuals were seen on the return to Massawa on 25th March.

Hydroprogne caspia. Common. One to ten Caspian Terns flying along the coral reefs and shores of the islands was a common sight during our visit. We did not see any, however, on Ito Umm Narus on 22nd March.

Sterna bengalensis. Common. We regularly saw five to 20 Lesser Crested Terns along the shorelines of the islands and in the open sea between them. This species was probably the commonest tern in the area.

Sterna bergii. Uncommon. The Swift Tern was only seen twice, once off Massawa on 17th March and once again at Sciumma on 19th.

Sterna anaethetus. Frequent. The Bridled Tern was not common; we saw the species twice, noting two individuals on 19th March and one on 21st, all on Sciumma. Smith (1951b) has recorded the main arrival in April, therefore our birds were probably forerunners of the influx of breeding birds.

Pterocles senegallus. Abundant. Flocks of Spotted Sandgrouse, 20 to 30 strong, were a daily sight on Sciumma Island. Although Roghi and Baschieri (1956) state that the Chestnut-bellied Sandgrouse *P. exustus* occurs in the Dahlak Archipelago, we did not identify any; it is, however, a common breeder on the mainland south of Massawa (K. D. Smith, *pers. comm.*).

Streptopelia decaocto. Abundant. The Pink-headed Dove was abundant on two of the islands, being frequent on the others. It was abundant on Ito Umm Narus and especially on the Assarca Island without a lighthouse. On the latter island, roughly circular in shape and perhaps 1,000 metres across, there was a remarkably high population of the Pink-headed Dove on 21st March. The island was covered with euphorbia shrubs and dotted about all over were hundreds if not thousands of doves. There was a constant cooing chorus, display flight and occasional attempted copulations although no nests were seen. Many were apparently feeding on the ground, possibly on euphorbia seeds. It was a scene of unusual numbers and activity.

The 'song' of the dove was quite different from that of the same species in Europe, where its common name is Collared Dove; the Dahlak birds cooed '*Ooh! r-r-r-r-r-r-oo-r*'. The opening note was very emphatic; the '*oo*' near the end was of higher pitch than the other notes. Perhaps this very different song lends substance to the view that this population along the Red Sea coast is not a race of *decaocto* as Mackworth-Praed and Grant (1960) give it, but a race of *Streptopelia roseogrisea* as in Vaurie (1965) and Goodwin (1967). The song of these birds (*S. r. arabica*) seems also to be noticeably different from that of the western form and nominate forms whose cooing is identical with that of the domestic Barbary Dove (Goodwin 1967). In addition to this 'song', a five-note call was frequently heard, this being strongly reminiscent of the comparable note of European Collared Doves. When flying from bush to bush, the wings often produced a high-pitched instrumental sound.

During the display flight of the presumed male, he would rise steeply into the air on noisy wings at an angle of about 80 degrees to the ground and then plane down at about 30 degrees in a straight glide, landing within a metre or so of his mate. When a perched dove displayed, it faced its mate, made itself very tall, and, putting out its neck feathers, bowed several times towards the other bird. Chases and attempted copulations, sometimes successful, followed. Derek Goodwin advises us that this display description accords with what is known of both *S. decaocto* and *S. roseogrisea*. *Streptopelia* spp. all have rather similar displays.

Since we found no nests, we do not know whether this species was breeding on the island. However, the large numbers of doves on the small island suggested to us that breeding was improbable. And as we saw flocks of the doves take off, rise to a considerable height and disappear north-westwards from view, we felt that we were witnessing a migration or possibly a feeding movement. Smith (1957) does say 'subject to local movements'.

Oena capensis. Frequent. On 18th, 19th and 20th March we saw three to four Namaqua Doves on Sciumma, although based on the dawn chorus, it was probably more common.

Upupa epops. Uncommon. Single Hoopoes *U. e. epops* were seen on Sciumma on 19th and 23rd March.

Galerida cristata. Abundant. The Crested Lark was seen on Sciumma, Assarca Island (with lighthouse) and Dahlak. Every morning the song of this lark was an important part of the dawn chorus of Sciumma. The lark was especially common on Assarca, for on 21st March we noted over 30 individuals in less than half an hour.

Eremopterix nigriceps. Abundant. Like the previous species, the song of the White-fronted Sparrow-lark was an important part of the dawn chorus on Sciumma. When walking over the open grassland there, we regularly saw flocks of ten or more. This lark was not observed on the other islands, however.

Motacilla flava. Common. Three Yellow Wagtails were seen on Sciumma on 21st March, one on the 22nd and 20 on the 24th. Males had rather dark blue-grey heads, and may have been *thunbergi*.

Motacilla alba. Frequent. Four White Wagtails were seen on Sciumma on 23rd March and two on 24th.

Oenanthe sp. Uncommon. Two wheatears were seen on Sciumma on 23rd March. They were tentatively identified as *O. monacha*, the Hooded Wheatear. This species is known from the Red Sea coast north of about latitude 18° N (Mackworth-Praed and Grant, 1960) in desert bush country; hence, our identification is possible. However, since this record would represent a southern extension of the species' range and a new one for Ethiopia, this identification must be considered with reserve. Another possibility is white-crowned examples of the White-rumped Wheatear *O. leucopyga*, common at least as far north as Assab (K. D. Smith, *pers. comm.*).

Acrocephalus sp. Abundant. Several *Acroocephalus* warblers, indistinguishable to J.B., who knows the species in Europe, from Great Reed Warblers *A. arundinaceus*, were heard singing and seen daily in the mangrove swamps of Sciumma; the warbler's song, too, was an important part of the dawn chorus there. Although no specific counts were made, at least ten individuals were seen in approximately 2,000 square metres of mangrove. We saw what we thought was this species in the mangroves of Ito Umm Narus; we did not see it elsewhere. Behaviour suggested that males were defending territories, for each appeared to be defending, by singing, a specific part of the mangrove swamp. This apparently is not unusual, for Smith (1957) records this species as 'regularly in song in winter'. Smith (1961), however, now inclines to the view that these birds are probably nesting Clamorous Reed Warblers *A. stentoreus*.

Sylvia (?) sp. Frequent. Unidentified palearctic warblers were seen in the mangrove swamps of Sciumma on 20th, 23rd and 24th March when on each day two individuals were noted.

Hirundo rustica. Common. Five to ten Swallows were seen daily on Sciumma, usually flying over camp around dusk.

Lanius elegans. Frequent. One to three Grey Shrikes were seen daily on Sciumma, either sitting on small acacias or at the edge of mangrove thickets.

Corvus albus. Common. The Pied Crow was a regular visitor to our camp at Sciumma, especially when our garbage was discarded. One to four individuals visited our camp daily.

It is of interest that during our stay in the Dahlak Islands we found little breeding activity among land birds. This is at first sight in direct contrast to what one would expect, for Smith (1955, 1957) states that most land species of the coastal plain and islands breed during the rains between December and May, and Clapham found no land birds breeding in August. Possibly with greater effort we would have found nests, yet it is unusual that, even in passing we saw so little breeding activity. Smith (*pers. comm.*) comments: 'I found that in three years out of four between 1951 and 1954 breeding of most land-birds in eastern Eritrea (average rainfall for Massawa 7–10 inches per annum) took place between December and May. But in the winter of 1952/53 only two inches were recorded at Massawa, and little breeding was observed. However, in the summer of 1953, the monsoon rain overshot the plateau and watered parts of the dry eastern plains, and several species, doves, larks, weavers, and the Sudan Golden Sparrow *Auripasser luteus*, which normally breed in the winter, were found breeding between July and September. Rainfall in Dancalia and on the islands is probably minimal in most years (Assab 1.4 inches), therefore breeding in these areas must be largely opportunist, depending on local storms'.

Our observations do agree with Smith and Clapham in that we saw no breeding activity of sea birds. Salvadori (1954) did, however, find *Phaethon aethereus* breeding in March. Furthermore, the small numbers of some species of sea birds, such as *P. aethereus* and *Sterna anaethetus*, we saw are also of interest. Since these species are in the Dahlak during their breeding seasons of July and August in large numbers (i.e. Clapham's observation of 2,000 *S. anaethetus* on 21st August vs. our three individuals), movements of large numbers of sea birds in and out of the Dahlak Archipelago, as Smith (1957) indicates, must take place. Further observations to document these movements are needed.

SUMMARY

Observations on 56 species of birds made between 18th–25th March, 1969, in the southern part of the Dahlak Archipelago, on the islands and surrounding waters of Disei, the two Assarcas, Ito Umm Narus, southern Dahlak near Dahlak Kebir and especially Sciumma, are reported in this paper; compara-

tive abundance of the species seen is recorded and, where relevant, breeding seasons are discussed.

The following is a summary of the main groups:—

Summer nesters (sea birds and *Falco concolor*): Most species were present, though mostly in markedly less than breeding season numbers. The records suggest that many, perhaps most, of *Larus leucophthalmus* and *hemprichii*, and *Sterna bengalensis*, remain in the breeding area, and *Sula leucogaster* and *Phaethon aethereus* may also go into this category. The few *Falco concolor* and *Sterna anaethetus* may have been early returners. *Sterna repressa* (see Clapham, 1964: 386) might also have been present, but was not identified.

Other residents: Among the larger birds, breeding was only proved for *Neophron percnopterus*, but *Pandion haliaetus* may also have been doing so. Among the smaller birds, *Streptopelia decaocto*, *Oena capensis*, *Galerida cristata*, *Eremopterix nigriceps* and *Acrocephalus* sp. gave some indication of breeding activity. *Prinia gracilis* (see Clapham, 1964: 388) may have been overlooked.

Palaearctic migrants: There were small numbers of waders, markedly less than in the autumn. Clapham (*pers. comm.*) found all the species mentioned except *Charadrius dubius*, mostly in larger numbers, and also *Erolia minuta*, *Tringa ochropus* and *glareola*, *Himantopus himantopus* and *Gallinago gallinago*. Small passerine migration should have been in full swing in March, but there seems to be little stop-over in the Dahlaks.

References:

Clapham, D. S. 1964. The birds of the Dablac Archipelago. *Ibis* 106: 376-388.

Goodwin, D. 1967. *Pigeons and Doves of the World.* British Museum (Natural History) London.

Heuglin, T. 1859. List of birds observed and collected during a voyage in the Red Sea. *Ibis* (1) 1: 337-352.

Lewinsohn, C., and Fishelson, 1967. The Second Israel South Red Sea Exhibition, 1965 (General Report). *Israel Journal of Zoology* 16: 59-68.

Mackworth-Praed, C. W., and Grant, C. H. B. 1960. *Birds of eastern and north-eastern Africa.* African Handbook of Birds, Ser. 1, Vol. 1. Longmans, Green & Co., London.

Moreau, R. E. 1969. The Sooty Falcon *Falco concolor* Temminck'. *Bull. Br. Orn. Cl.*, 89(3) 62-67.

Oren, O. H. 1962. The Israel South Red Sea Exhibition. *Nature* 4834, June 23, 194: 1134-1137.

Roghi, G., and Baschieri, F. 1956. *Dahlak*. Nicholes Kaye Ltd., London.

Smith, K. D. 1951a. On the birds of Eritrea. *Ibis* 93: 201-233.

— 1951b. Notes on the Bridled Tern in the Red Sea. *Brit. Birds* 44: 325-326.

— 1955. The winter breeding season of land-birds in eastern Eritrea. *Ibis* 97: 480-507.

— 1957. An annotated check-list of the birds of Eritrea. *Ibis* 99: 1-26, 307-337.

— 1961. On the Clamorous Reed-Warbler *Acrocephalus stentoreus* (Hemprich and Ehrenberg) in Eritrea. *Bull. Br. Orn. Cl.* 81: 28-29.

Salvadori, F. B. 1954. Spedizione subacquea italiana. Note biologiche sugli uccelli delle Isole Dahlak. *Riv. Ital. Orn.* 24: 98-124.

Tornielli, A. 1964. Appunti su alcuni Uccelli osservati lungo le coste delle Isole Dahlac (Eritrea). *Riv. Ital. Orn.* 34: 217-224.

Vaughan, R. 1961. *Falco eleonorae. Ibis* 103a: 114-128.

The Brush Tongue of Artamidae

by John L. McKean

Received 21st July, 1969

The relationship of the Artamidae to other passerine families has not been adequately studied. It is generally agreed that its taxonomic position is obscure (Smythies, 1964). The single genus *Artamus* is remarkable for its uniformity, differences between species lie chiefly in plumage patterns and size. Species of *Artamus* differ from members of other passerine families in possessing powder-down feathers. Another unusual feature of the species of Artamidae that warrants consideration is their brush-tipped tongue, which does not appear to have been reported previously. Analysis of gizzard contents and observation of Australian species of *Artamus* indicate that they are mainly insectivorous; there are, however, odd observations which indicate that they may at times be nectarivorous (e.g. Campbell, 1901).

Figure 1 shows the tongues of four Australian species of *Artamus*.

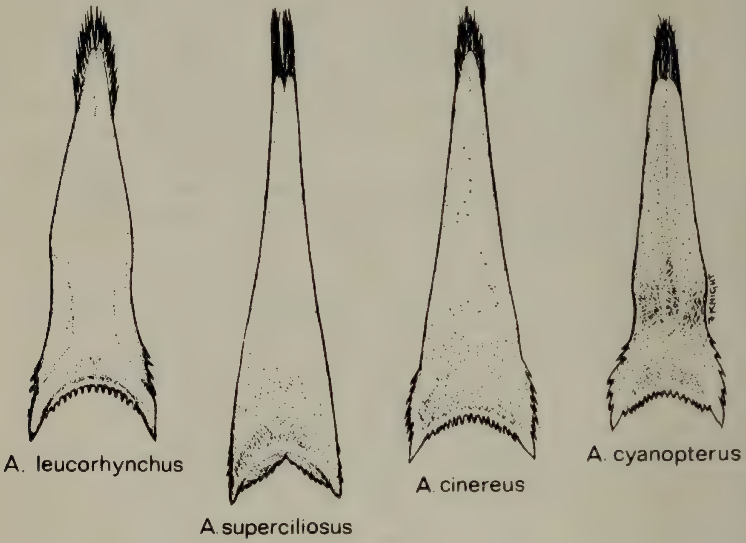


Fig. 1

In appearance the artamid tongue resembles that of the Zosteropidae, but the tip is less fimbriated and it is much broader in relation to its length than in *Zosterops*. The brush-tipped tongue need not necessarily indicate affinity with the Zosteropidae as a number of passerine families which do not appear to be closely related are known to have brush-tongued members (Rand, 1967; Gardner, 1925). Nevertheless, it would appear that a more thorough study of anatomical and physiological characters of the Artamidae might well provide further clues that could help to solve the problem of the phyletic position of the family.

References:

Campbell, A. J. 1901. "Nests and Eggs of Australian Birds." Melbourne. i–xl, 1–1102.

Gardner, L. L. 1925. The adaptive modifications and the taxonomic value of the tongue in birds. *Proc. U.S. Nat. Mus. 67*, 1–49.

Rand, A. L. 1967. The Flower-Adapted Tongue of a Timaliinae Bird and its Implications. *Fieldiana, Zool. 51*, 53–61.

Smythies, B. E. 1964. Wood-Swallow in "A New Dictionary of Birds". Ed. Thomson, A. Lansborough. Nelson: London, 1–928.

A new sub-species of the White-quilled Rock Pigeon

by D. Goodwin

Received 15th July, 1969

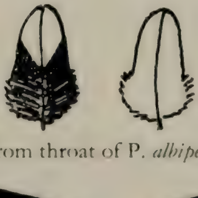
Results of the Harold Hall Australian Exhibition, No. 23
The previous number in the series appeared in Emu 69 : 1-7

On 11th August, 1968, the members of the 5th British Museum (Natural History) Harold Hall Australian expedition found at Stokes Range, Victoria River, Northern Territory (15° 36′ S, 131° 06′ E) a population of *Petrophassa albipennis* Gould. Four males and a female were collected.

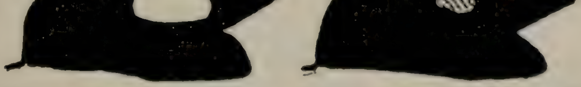
These five birds differ strikingly from specimens of *P. albipennis* collected further west (at 16° 27′ S, 125° 56′ E; 17° 13′ S, 126° 37′ E; and 17° 10′ S, 125° 19′ E)., and from all previously described examples of the species, in lacking the conspicuous white wing patch. On close examination they do, however, show varying but obsolescent traces of the white area. On two, British Museum Nos. 1969-4. 112 and 115, this is not readily visible, but the undersides of the primaries have faint traces of grizzled whitish grey in a small area. No. 1969.4.114 shows a small but clearly visible freckled white area on the undersides of the central primaries. No. 116 and the only female, No. 113, have similar but slightly more conspicuous whitish areas. Of the several other individuals seen in the field only one showed a visible white area on the wing in flight (D. J. Freeman, *pers. comm.*)

The five birds of the new form are smaller in size and on the average lighter in weight than other specimens of *albipennis* collected by the expedition. They are also slightly but noticeably lighter and redder in colour, even if three very greyish females collected at Joint Hill (16° 27′ S, 125° 56′ E) which may prove referable to *P. albipennis alisteri* Mathews are excluded. The colour difference is, however, not great and one specimen of typical *albipennis*, a male from Mount Bell (17° 10′ S, 125° 19′ E) is as red as and only slightly darker than the Victoria River birds. As in allied species wear and bleaching cause a considerable difference in colour between old and new feathers. The orbital skin of the new form would appear to be paler; the collectors recorded it as ‘grey’ or (once) ‘light grey as against ‘dark grey’ or ‘black’ for typical *albipennis*. Soft part colours are otherwise the same, allowing for slight individual variation.

The Victoria River birds appear to have diverged markedly in wing pattern from other known populations of *P. albipennis*. The habitat in which they



Diagrammatic sketch of feathers from throat of P. *albipennis* (l) and *P. rufipennis* (r).



Diagrammatic sketches to show patterns on undersides of wings of *P. a. albipennis* (l) and *P. a. boothi* (r).

were found was similar to that in which typical *albipennis* were collected. The behaviour observed and the only call heard was the same in both forms. It would be interesting, therefore, to know what selective pressures (or lack of them) have been at work, especially as the white wing patch of other forms of species is not usually visible except when the bird is in flight.

It ought, perhaps, to be emphasised that although the area where these dark-winged birds were seen and collected is in the north of the species' range, they show no sign of intergradation with or introgression of the Chestnut-quilled Rock Pigeon *Petrophassa rufipennis* Collett. This species, which replaces *albipennis* further north, is very similar and in coloration nearly matches the greyer specimens of *albipennis*, but it differs in the following plumage characters:—The feathers of its neck have a more brightly 'scaled' appearance due to the grey central areas being paler and having white shaft streaks, and the dark subterminal band is a slightly darker and more contrasting sepia. The feathers of the upper throat are white or cream-coloured instead of black with a contrasting white or cream spot (see sketch) as in *albipennis*. The wing patch is chestnut and more extensive than the corresponding white patch of *albipennis*. The new form of *albipennis* shows no signs of any of these characters, and indeed, by reason of its very light and reddish ground colour, differs more obviously from *rufipennis* than other forms do.

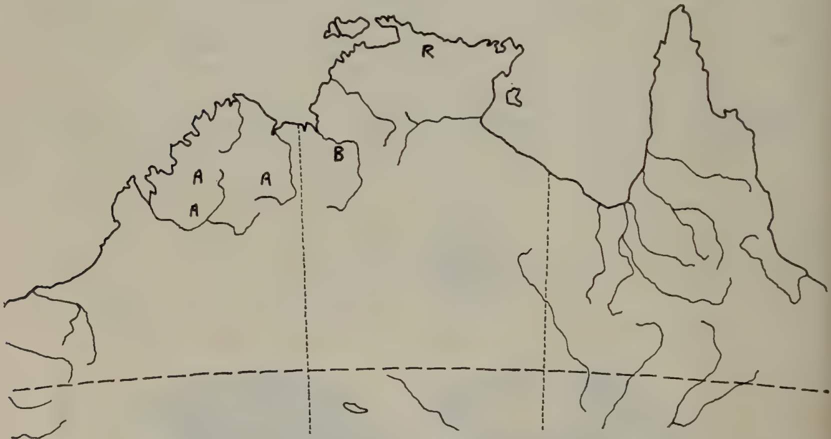
The Victoria River population thus clearly represents an immediately recognisable subspecies:

Petrophassa albipennis boothi, subsp. nov.

Type: Adult ♂ from Stokes Range, Victoria River, Northern Territory (15° 36′ S, 131° 06′ E), collected by Major B. D. MacDonald Booth on 11th August, 1968. B.M. registered No. 1969.4.112.

Diagnosis: Differs from *P. a. albipennis* in having only obsolescent traces of the white patch on the primaries. Also smaller in size, and averaging a little lighter and redder in general colour. Comparative figures are:—

boothi wings of four ♂♂ 130, 131, 132, 134, average 131.7 mm.



A. Approximate areas where specimens of *Petrophassa albipennis* with usual wing pattern were collected.

B. Area where *P. a. boothi* was collected.

R. Area where *P. rufipennis* was collected.

albipennis wings of four ♂♂ 136, 136, 137, 140, average 137.2 mm.
boothi weight of four ♂♂ 103.6, 111.5, 128.6, 129, average 118.1g.
albipennis weight of four ♂♂ 120.4, 133.8, 154, 163, average 142.8g.

The new race is named after Major B. D. McDonald Booth, who led the expedition on which these specimens were collected, and who, together with his colleagues, obtained much useful information on this and other species.

The relationship of *Turdus pelios bocagei* (Cabanis) and *Turdus pelios stormsi* Hartlaub

by C. W. Benson

Received 25th June, 1969

Dr. Kenneth C. Parkes, Curator of Birds at the Carnegie Museum, Pittsburgh, has lent me two specimens of *Turdus pelios* Bonaparte, both collected by Rudyerd Boulton on 17th March, 1931 at Ngara, at 11° 23′ S., 14° 11′ E, in the Cuanza Sul District, western Angola. As he and Major Melvin A. Traylor have indicated, one (Carnegie Museum no. 109636) is of normal colouration of *T. p. bocagei*, as is to be expected from the definition of the range of this form (White, 1962: 152). But the other one (Carnegie Museum no. 109606) closely resembles in colour *T. p. stormsi*, which compared to *bocagei* is much more heavily suffused with tawny on the underside, with little or no contrasting white on the abdomen and the chin. According to White, *stormsi* replaces *bocagei* in eastern Angola, in Alto Zambesi. But on the basis of these two specimens from Ngara, *prima facie* there is a case for considering *bocagei* and *stormsi* as specifically distinct.

Measurements in millimetres of these two specimens, and of others of *T. pelios* from Angola, the southern Congo and Zambia, in the British Museum (Natural History), are as follows:—

Sex	*Wing*	*Tail*	*Culmen from base*
(a) Specimens like *bocagei* in colour			
Angola west of 15° 30′ E. Ngara			
1♂	118	90	22
Dondo, Ndalla Tando			
5♂♂	115, 117, 117, 118, 120	83, 83, 88, 91, 93	22, 23.5, 24, 24, 24.5
3♀♀	107, 110, 111	83, 84, 86	24, 24, one broken
Mt. Moco			
1♂	132	98	24.5
Kasai, south-western Congo: Luebo and Luluabourg			
1♂	114	85	23
1♀	115	88	23.5
(b) Specimens like *stormsi* in colour			
Angola west of 15° 30′ E.: Ngara			
1♂	117	93	broken
Eastern Angola: Luau River			
1♂	122	91	22
1♀	122	95	25
Zambia and adjoining southern Congo (Katanga)			
3♂♂	120, 124, 127	88, 93, 94	23, 23, 24
3♀♀	120, 123, 126	96, 97, 98	23.5, 24, 24
1 o	124	100	24

The exact locus of all the western Angolan localities is given by Traylor (1963), Mt. Moco being the most southerly, at 12° 25 S., 15° 16′ E. The Luau River is in the far east, at 10° 36′ S., 22° 19′ E.

With the exception of the Mt. Moco specimen, and the one from Ngara under (b), it can be seen from the wing-lengths especially that those coloured like *bocagei* are smaller than those coloured like *stormsi*. In particular, the Ngara specimen under (b) is smaller in wing-length than any other of these latter. It is accordingly concluded that despite its similarity to *stormsi* in colour it must be placed with *bocagei*, and that for the present at least there is no justification for considering *bocagei* and *stormsi* as specifically distinct.

The large size of the Mt. Moco specimen of *bocagei* is striking. It even has a longer wing-length than any of the specimens of *stormsi* above. It was collected at an altitude of as much as 7,000 feet. It was also measured by Hall (1960: 428), whose figures suggest that there is a general tendency to large size in this highland locality, and that it is not a question merely of one unusually large individual. She also gives the wing-length of a male from Quela, a highland locality at 9° 16′ S., 17° 02′ E., as as much as 129 mm.

M. P. Stuart Irwin has kindly supplied a further series of wing-lengths, from the material of *stormsi* from Zambia, in the National Museum of Rhodesia, Bulawayo:—

	North-Western Province
10♂♂	120, 121, 123, 123, 123, 123, 124, 125, 130, 130
10♀♀	113, 114, 120, 122, 123, 123, 123, 123, 125, 125
	Western Province
1♀	122
	Luapula and Northern Provinces
7♂♂	119, 124, 126, 127, 129, 131, 133
7♀♀	113 (primaries somewhat worn), 123, 124, 125, 127, 131, 131

Although there are four specimens with a wing-length of less than 120 mm., thus falling within the general range for *bocagei* (exclusive of specimens from Mt. Moco and Quela), as a whole these figures do also support the larger size of *stormsi*. The Zambian specimens are all from altitudes between 3,000 and 5,000 feet.

Thanks are due to Dr. Parkes for bringing the problem of the relationship of *T. p. bocagei* and *T. p. stormsi* to my notice, and to Mrs. B. P. Hall and A. D. Forbes-Watson for examining specimens with me.

References:

Hall, B. P. 1960. The ecology and taxonomy of some Angola birds. *Bull. Brit. Mus.* (*Nat. Hist.*) 6: 370–453.

Traylor, M. A. 1963. Check-list of Angolan birds. *Publ. Cult. Comp. Diamant. Angola* 61.

White, C. M. N. 1962. *A revised check list of African shrikes, orioles, drongos, starlings, crows, waxwings, cuckoo-shrikes, bulbuls, accentors, thrushes and babblers.* Government Printer, Lusaka.

An abnormality of the hyoid apparatus in a Lapwing *(Vanellus vanellus)*

by P. J. K. Burton

Received 17th July, 1969

Cases of deformity of the tongue in birds are rarely reported, although there is an extensive literature on bill abnormalities (see the review by Pomeroy, 1962). I know of no instance referring to the part of the hyoid skeleton posterior to the tongue. The case described below is a particularly intriguing one, for which at present no fully satisfactory explanation can be offered.

The specimen concerned is a Lapwing in the spirit collection of the British Museum (Natural History), registration number 1967.29.17. The bird was in good condition, its stomach containing seven small stones and traces of plant matter. It was examined in the course of a wider survey of the hyoid and its musculature throughout the Charadrii. The results of this survey (Burton, 1969, and in prep.) may be consulted for details of their structure in waders generally and for an explanation of nomenclature used.

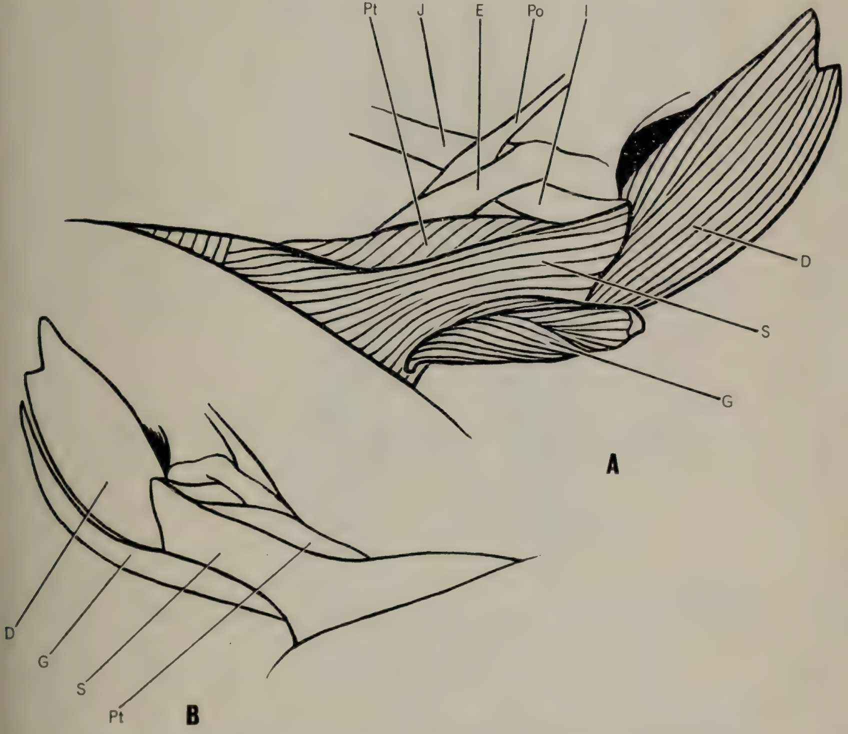


Fig. 1. A. Lateral view of left side of head in region of rear end of mandible, to show deformed hyoid horn.
Abbreviations: D—M.Depressor Mandibulae; E—External jugo-mandibular ligament; G—M.Geniohyoideus; I—Internal jugo-mandibular ligament; J—Jugal bar; Po—Post-orbital ligament; Pt—M.Pterygoideus; S—M.Serpihyoideus.
B. Outline drawing of right-hand side of same bird, showing normal condition.

On inspecting this specimen it was found that the posterior end of the left hyoid horn was bent forwards, lying parallel with the rest of the horn, along its lateral surface (Fig. 1). In ventral view (Fig. 2), the posterior tip of the urohyal could be seen to be slightly bent to the left, and M. serpihyoideus was displaced to the left. Closer examination showed that most of the fibres of M. geniohyoideus attached to the bent posterior section of the horn were in continuity with the rest of the muscle, originating on the mandible. Dorsally, a few of its fibres terminated at the position of the bend. Moreover, a group of posterior fibres of M. serpihyoideus were attached along the dorsal edge of the bent section.

The entire tongue and hyoid apparatus were then removed and the musculature stripped from both horns in order to reveal skeletal features. It could then be seen that the left epibranchial was broken just posterior to its articulation with the ceratohyal. The break was a clean one, through a cartilaginous region (Fig. 3), but the broken piece was firmly welded to the rest of the horn by cartilaginous fusion and connective tissue binding in the vicinity of the articulation.

The hyoid apparatus as a whole was of normal proportions relative to the

4 NOV 1969

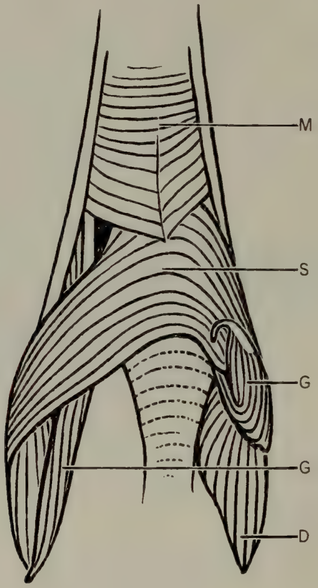


Fig. 2. Ventral view.
Additional abbreviation: M—M.Mylohyoideus.

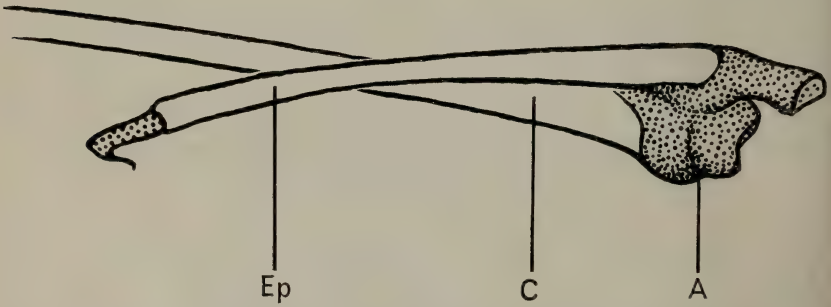


Fig. 3. Lateral view of skeleton of posterior part of left (deformed) hyoid horn. Abbreviations: A—Site of Ceratohyal/Epibranchial articulation; C—Ceratohyal; Ep—Epibranchial. Cartilage shown stippled.

head, and the components of the broken (left) horn were of exactly the same dimensions as the intact (right) horn. It therefore seems clear that the break occurred when the bird was fully grown, though some time before it died. The problem remains as to how this injury was caused. There was absolutely no indication of any other injury to the bird's head apart from the displacement of a narrow band of fibres of M. serpihyoideus, noted above. It seems most likely that this accident was the result of some abnormal event in the process of feeding, but it is difficult to visualise what this might have been. The horns may be vulnerable to such damage during swallowing of an exceptionally large object, as this would cause extensive downward displacement of the whole hyoid apparatus and for much of their length the horns would lose contact with the ventral edge of the mandible and M. depressor mandibulae. Deprived of this support dorsally, it is conceivable that the horn might buckle under the contraction force of M. geniohyoideus, particularly if the normal action of this muscle (pulling the tongue forward) were opposed by the food object in the mouth.

One conclusion that can be safely drawn is that we do not yet sufficiently understand the actions of the avian tongue and its musculature in life. However, this unusual injury certainly deserves consideration in any future analysis of these actions.

References:

Burton, P. J. K. 1969. *Anatomy and adaptive modifications of the feeding apparatus in waders (Aves: Charadrii)*. Ph.D. thesis, University of London. (In prep.) Modified version of the above.

Pomeroy, D. E. 1962. Birds with abnormal bills. *Brit. Birds*, 55 (2), 49–72.

Escapes of *Psittacula krameri* and *Agapornis* spp. breeding in Kenya

by G. R. Cunningham-van Someren

Received 10th June, 1969

In recent years there has been quite a trade in and export of cage birds, principally from Tanzania but also from Kenya and Uganda, and there are many private aviary collections which include exotic species in the general area of Nairobi, Kenya. It is inevitable that some species, not indigenous in Kenya, should have escaped. Parrots, parakeets and lovebirds have been particularly popular as cage birds, together with weavers and finches.

The observation which has prompted this note has been the finding of the Rose-ringed Parakeet *Psittacula krameri* (Scopoli) breeding in the Nairobi National Park. My wife and son reported seeing a green parakeet with a long tail in the Park some weeks ago, and last week again saw four birds in the vicinity of the first sighting. To-day (2nd June, 1969), at the scene of the second sighting, we found a pair of *P. krameri* with a nest in a hole, some thirty feet up in a dead limb of a hardwood tree *Brachylaena hutchinsii*. The hole was roughly round with somewhat ragged edges and larger than the holes made by any local barbet or woodpecker. We watched and photographed the birds for over two hours, but did not see the other two birds, which could possibly have been the offspring of the pair we had under observation.

Enquiries have shown that a dealer and collector had imported a few birds from India, the former some pairs eight years ago, and the latter more recently. It is not possible at present to establish the race of the Park birds, but there is no evidence that they have come from Zanzibar, where the Indian race *P. k. borealis* (Neumann) has been introduced (Mackworth-Praed & Grant, 1952). There is no earlier record of the species from Kenya, and in Uganda it is only known from Bwamba and Masindi (van Somerens, 1949). Yet there seems no reason why *P. k. parvirostris* (Souancé) should not spread up the Blue Nile into Ethiopia, or up the White Nile into Uganda, or for the western *P. k. krameri* to spread further east in Uganda. The Nairobi National Park birds are thus most likely to be escapes, or the progeny of escapes, of imported Indian birds.

Neither Mackworth-Praed & Grant (1952) nor Cave & Macdonald (1955) give breeding records for the Sudanese *P. k. parvirostris*. In the Sennar area, Blue Nile, the bird is very common, and flocks of 20 to 30 can be seen in riverine forest and in sorghum fields, where they do considerable damage when the heads are ripening. Breeding takes place in September to November, and nests are in holes in trees. One tree, an old dead fig, had two nest holes, and these were occupied by a pair each September over a period of six years, between 1960 and 1966, when the tree was cut down. This tree also had nest holes of a barbet and a woodpecker. No attempt was made to investigate the nests, since photography was my main object. This parakeet was frequently seen as a cage bird in Khartoum and elsewhere, and I was informed that regular collection of its young, and of *Poicephalus meyeri* (Cretzschmar), was undertaken for the local cage-bird trade.

Two introduced lovebirds are now established as breeding species in Kenya. These are *Agapornis personata* Reichenow and *A. fischeri* Reichenow, both having been introduced from Tanzania, where at one time they were trapped in numbers for export to Europe. *A. personata* is now breeding in the residential areas of Nairobi, and small parties can be seen in gardens. They, like *Poicephalus gulielmi* (Jardine), have taken to feeding on flowers, and probably take seed of the Australian exotic *Grevillia robusta*. *A. fischeri*, particularly at Lake Naivasha, can be found in small noisy flocks of up to 15 birds among the large lake-side *Acacia* trees. Nesting is in holes or broken rotten branch ends, and one record is of a pair making use of an old weaver's nest.

Escapes of both species have been seen at widely distributed points. At Namanga, on the border between Kenya and Tanzania, just north of the natural range of *A. personata*, Major Gethin kept large numbers of both, and he (pers. comm.) reports many escapes, since "they are voracious 'eaters' of any timber used in the construction of the aviary". However, he confirms that over many years he never saw any of the escapes living or breeding in the area, similarly with escapes of the Budgerigar *Melopsittacus undulatus* (Shaw), and suggests they "fell victim to hawks or found insufficient feeding in the area and moved out". In his opinion this is due to lack of suitable grass species as food, as the area is heavily grazed by Masai cattle and there is seldom much grass except in good rain years. Major Gethin found a drowned *A. fischeri* in a watertank at Ololua, some 12 miles from Nairobi in an area of open grasslands with *Acacia* and riverine forest.

Mackworth-Praed & Grant (1952) mention that *A. personata* has been introduced to Dar-es-Salaam, and *fischeri* to Tanga, where they evidently breed successfully. It is remarkable that neither of these species has spread north from their curiously restricted natural ranges on the interior plateau of Tanzania, where they inhabit grassland with scattered trees, breeding in baobabs (Moreau, 1948). Yet local escapes at Nairobi, Dar-es-Salaam and elsewhere are able to survive. More field work is required on parrots and parakeets generally to ascertain feeding requirements, breeding, distribution, etc. Published information is scanty, and distributions often ill-defined. The status and distribution of the various indigenous forms in Kenya could be affected, should escapes become adapted and spread, as may already be happening. It is important to ascertain the factors which prevent the spread of indigenous forms but might allow escapes to do so.

Thanks are due to C. W. Benson for assistance in finalising this note.

References:

Cave, F. O. and Macdonald, J. D. 1955. *Birds of the Sudan.* Oliver & Boyd, Edinburgh and London.
Mackworth-Praed, C. W. and Grant, C. H. B. 1952. *Birds of eastern and north-eastern Africa*, 1. Longmans, Green & Co., London.
Moreau, R. E. 1948. Aspects of evolution in the parrot genus *Agapornis*. *Ibis*, 90: 206–239, 449–460.
van Someren, V. G. L. and van Someren, G. R. C. The birds of Bwamba. *Uganda Journ.*, 13, suppl.

Notes on Tripolitanian Birds

by Graham Bundy and John H. Morgan

Received 27th June, 1969

The area comprises the former Italian province of Tripolitania, extending from the Mediterranean coast, south to about 28° N. and from the western border of Libya to 17° E. Large areas are difficult of access and impossible to cover adequately, such as the Hamada el Hamra or Red Desert, which lies east of Ghadames and south of the Jebel Nafusa. In contrast, roads have led to concentrated observations for the area adjoining the sea, and have made fairly thorough exploration possible in the Jebel Nafusa. The geography is given by Guichard (1956).

Our observations were of varying intensity between 15th July, 1964, and 1st July, 1967. We lived in or near Tripoli town for this period, and daily counts of birds were made, especially around Idris airport, 28 km. south of the coast. Frequent excursions were made to the Tunisian border in the west, as far as Sirte in the east, and to the Fezzan (Sebha oasis) in the south.

The following notes are intended to supplement the existing literature for the area, especially the more important works by Moreau (1961), Etchécopar & Hue (1967) (E. & H.) and Heim de Balsac & Mayaud (1962) (H. de B. & M.). As Moreau says, the western half of Libya is better covered ornithologically by N. African standards, but the literature is still brief and sketchy, with the possible exception of Guichard (1957). With the exception of Snow & Manning (1954), Johnson (1949) and Cavazza (1932), no observations seem to have been made in autumn. Cavazza, however, never seems to have been present in August or September.

Our preoccupation with migrants rather overshadowed the study of breeding species. Future workers in this region might well consider concentrating on breeding birds. Of the 265 for which we can find records, we saw 235 species, 20 apparently new for the area. Our list includes 66 breeding species, six of which we found breeding for the first time. The general pattern of visible migration is as described by Moreau; migrants, especially passerines, are more conspicuous and numerous in spring, but autumn movements of Ardeidae and Threskiornithidae are sometimes spectacular.

When comparing our migrants with the charts compiled by Moreau, we have categorized degrees of abundance with the number of seemingly individual occurrences/birds as follows. "*Rare*" 0–5, "*Uncommon*" 6–20, "*Not uncommon*" 20–50, "*Fairly common*" 50–100, "*Common*" 100+.

A full list has been prepared and deposited in the Edward Grey Institute, Oxford, England. The nomenclature follows Vaurie (1959–65).

Podiceps ruficollis. Little Grebe

About 6 pairs at Tawarga on some reed-fringed pools, eggs 25 April. First breeding record for Tripolitania.

Ardea cinerea. Heron

Winter visitor and passage migrant, though recorded in every month. Largest movement, 136 birds flying S.W. in a long line, 11 Sept., 1965, over the Wadi Kaam. Smaller numbers were regularly seen moving west along the coast in Aug. and Sept., and a few going east from early April until 30 June, the spring passage being much lighter than the autumn one.

Ardea purpurea. Purple Heron

More numerous autumn than spring, between late July and mid-Nov., juveniles predominating. H. de B. & M. also cite the Fezzan and Ghat in autumn. A few adults in the coastal wadis from Mar. to May.

Egretta alba. Great White Egret

One in the Wadi Kaam 10 Oct. until 5 Dec., 1965.

Egretta garzetta. Little Egret

Winter visitor to the coast, but a marked passage occurs also, being more numerous April and May than in Sept. In spring some birds were seen in dry, semi-desert areas, such as Idris airport on 24 April, 1965, and a flock of 17 on the Azizia plain on 2 May, 1965.

Ardeola ralloides. Squacco Heron

Passage migrant Mar.–May and July–Oct., again more numerous in autumn. 38 seen in Tripoli harbour 25 Aug., 1964, and 20 going east over Khoms, 6 Sept., 1964. Records from the interior were few, but single birds in April at Ghadames and Sebha oases. H. de B. & M. cite Fezzan, Djanet and Ghat for autumn.

Nycticorax nycticorax. Night Heron

An immature at Wadi Kaam on 6 Nov. and 5 Dec., 1965; an adult there on 15 Jan., 1966. Otherwise a small passage from late Mar. to mid-May and possibly fewer between mid-July and Oct.

Ixobrychus minutus. Little Bittern

More numerous than indicated by Guichard. It is not uncommon in the few wadis April and May, though less common between Aug. and Oct. On 8 May, 1965, 15 were flushed from a tamarisk bush by the Wadi Kaam. In autumn mainly immatures.

Ciconia ciconia. White Stork

Only seen between mid-Mar. and 12 June on dry steppe, especially the Azizia plain, with up to 26 on 17 April, 1965.

Platalea leucorodia. Spoonbill

Winters further east than shown by E. & H. Up to 3 on Wadi Kaam between Oct. and Feb. Most together, 10 in the west off Pisida 12 Mar., 1966.

Plegadis falcinellus. Glossy Ibis

Not uncommon Mar.–May in coastal wadis and frequently in isolated oases and water-holes in sub-desert. Commoner in autumn when, however, it was only seen on the coast, though H. de B. & M. mention Ghat (Fezzan) Sept. and Oct. Largest flocks 110 going west on 9 Sept. near Garrabulli, and 60 also going west near Tripoli 2 days later.

Anas querquedula. Garganey

Rather uncommon between late Feb. and May, but common along the coast from late July until early Dec. Most 143 at Wadi Kaam 12 Sept., 1965.

Netta rufina. Red-crested Pochard

Only record, a drake at Wadi Kaam 14–20 Nov., 1965.

Melanitta nigra. Common Scoter

Three females in Tripoli harbour between 29 Nov., 1964, and 31 Jan., 1965. The first record for Libya.

Mergus serrator. Red-breasted Merganser

Up to 14 along the coast each winter between early Nov. and late Mar.

Oxyura leucocephala. White-headed Duck

A female Wadi Kaam, 5 Dec., 1965, apparently the first for Libya.

Neophron percnopterus. Egyptian Vulture

Breeds along the escarpment from Jefren to Nalut, but not as widespread as indicated by E. & H. One Jan. record, but chiefly between Mar. and Sept.

Aquila chrysaëtos. Golden Eagle

Rare, status uncertain, only records one Jebel Nafusa 15 April, 1967. Probably a vagrant from Tunisia.

Aquila pomarina. Lesser Spotted Eagle

A weak bird, captured at the Wadi Kaam 14 Nov., 1965, was fit to be released after 14 days. One Wadi Turgat 12 April, 1967. E. & H. mention one record for Libya, presumably the undated example in the Tripoli museum.

Hieraäetus fasciatus. Bonelli's Eagle

Two present, around the escarpment near Jefren in April, 1967, may have bred there.

Milvus migrans. Black Kite

Rather uncommon, records of single birds near the coast in May, July, Oct. and Nov. H. de B. & M. mention a few in the Fezzan in Sept.; the 20 seen together by Guichard (1957) at Beni Ulid would seem exceptional.

Pernis apivorus. Honey Buzzard

Our only record is one at Wadi Kaam on 29 Sept., 1965; there are two undated examples in the Tripoli museum.

Circus aeruginosus. Marsh Harrier

A few winter in coastal areas, but chiefly encountered on passage, especially in spring from early Mar. until mid-May, when it is not uncommon over dry ground, notably cereal cultivation.

Circus macrourus. Pallid Harrier.

Not uncommon Feb. – late April, passing earlier than, though overlapping with, *C. pygargus*. Neither this species nor *pygargus* were seen in autumn.

Falco biarmicus. Lanner Falcon

Typical brown examples are not uncommon residents in the hillier parts of the interior, with a few on the coast. A pale grey and white form, which has apparently not been described, was seen fairly often from the coast well into the interior, from Aug. to April. These birds are presumably the same as those mentioned by Smith (1965). In the field they look larger than brown Lanners, blunt-winged, pale grey above with darker primaries, an almost completely white head and underparts. They show very narrow striations on flanks and crown, and a narrow, inconspicuous moustachial stripe, when seen well. The possibility of their being some form of Saker cannot be ruled out. There are no skins resembling these birds in the British Museum (Nat. Hist.).

Falco cherrug. Saker Falcon

One at a coastal wadi east of Garrabulli 17 April, 1967, our only record.

Falco eleonorae. Eleonora's Falcon

One passed west at the Wadi Kaam 10 Oct., 1965, and another 17 Oct., 1966. First for Tripolitania.

Falco naumanni. Lesser Kestrel

Spring passage as shown by Moreau, with up to 400 together 19 Mar., 1965, near Khoms. A few were found breeding along coastal cliffs and in ruins east of Tripoli in 1965 and 1966, apparently the first known to breed in the area.

Rallus aquaticus. Water Rail

Individuals winter at Wadi Kaam and Tawarga, where one in dense reed beds on 25 April, 1965, could have been breeding.

Porzana parva. Little Crake

Passage migrant in coastal wadis, not uncommon April–May, uncommon Sept.–Oct.

Porzana pusilla. Baillon's Crake

The only records are one at Wadi Turgat 30 Mar., 1965, and one undated example in the Tripoli museum.

Porzana porzana. Spotted Crake

We saw rather more than Guichard (1957), especially during Mar., with some until May. Seen again from Sept. until 20 Dec., all in coastal wadis.

Gallinula chloropus. Moorhen

Not proved breeding, though adults were present in two coastal wadis until 30 May, 1965, with many immatures present during Sept. Breeds Fezzan (H. de B. & M.). Probably mainly a passage migrant. It is fairly common in the few suitable areas in April and May, and from Sept. until Dec.; rare in remaining months. One freshly dead Hon oasis (29° N. 16° E.) on the Fezzan road 17 Jan., 1966. Very shy and retiring, owing to heavy persecution by local gunners, it could have been overlooked while breeding, especially at Tawarga.

Fulica atra. Coot

Winter visitor, Sept.–April. Uncommon 1964/65, but numerous 1965/66, with up to 400 together Wadi Kaam.

Chlamydotis undulata. Houbara Bustard

Distribution as in H. de B. & M., but much persecuted, and certainly now less common than indicated by Johnson (1949).

Charadrius dubius. Little Ringed Plover

E. & H. show this species breeding throughout the coastal region and extending inland. We found no evidence of breeding, though between Mar. and May migrants were common and often indulged in brief song flights and aerial pursuits. Fairly common again from July to Nov., chiefly on coastal wadis but also on seasonal water in semi-desert areas. One 16 Jan., 1967, at Wadi Kaam.

Charadrius leschenaultii. Great Sand Plover

One with Kentish Plovers, at the Wadi Kaam on 6 Oct., 1965. The only record for Tripolitania.

Eudromius morinellus. Dotterel

Winter visitor from Sept.–April, sometimes associating with Golden Plovers. Found in widely scattered semi-desert areas, flocks may have been overlooked. Maximum together 200, Idris airport 10 Nov., 1964. Fewer there 1965/66, when up to 60.

Capella media. Great Snipe

Guichard shot one in Mar., 1952. Our records include one Mar., 1965, one Mar., 1966, and another in April, 1967, all in coastal areas.

Limosa lapponica. Bar-tailed Godwit

Guichard saw one in Aug. Our only record was one at Zuara on the coast, 12 Oct., 1965.

Tringa glareola. Wood Sandpiper

Fairly common in the wadis along the coast, and Sebka pools, Mar.–May, July–Oct. Only 3 records Nov.–Jan., and certainly does not winter commonly here, as implied by E. & H. *T. ochropus* is also scarce in winter here, though occurs during much the same periods as *T. glareola* on passage.

Tringa erythropus. Spotted Redshank

E. & H. mention none wintering and refer to it as "not very common". We saw up to 6 together in Jan. at Wadi Kaam and Misurata. On passage it is not uncommon April–May and Aug.–Nov. in coastal areas.

Tringa stagnatalis. Marsh Sandpiper

Only seen in Mar. and April in several widespread coastal localities, from the Tunisian border eastwards, and once inland.

Calidris minuta. Little Stint

Common winter visitor along the coast, more on passage. Around 50 winter at the coastal wadis Kaam and Turgat, though during May this number reaches 200.

Calidris temminckii. Temminck's Stint

A passage migrant, not uncommon late Mar. to mid-May and Sept.–Oct. on the coastal wadis. During Jan. and Feb., 1966, 8 near Tripoli.

Calidris ferruginea. Curlew Sandpiper

E. & H. call this chiefly a winter visitor to N. Africa. In this area, uncommon passage migrant on the coast April–May and Sept.–Oct., none being seen between Oct. and April.

Calidris alba. Sanderling

Commoner than indicated by E. & H., wintering along coast from Oct.–May. Larger numbers in May suggest some passage.

Limicola falcinellus. Broad-billed Sandpiper

Singles at the Wadi Kaam, 6 Oct., 10 Oct., and two there 14 Nov., 1965. Guichard shot one there in Aug., 1953.

Philomachus pugnax. Ruff

Chiefly a passage migrant, Mar.–May and July–Oct. when it is fairly common. H. de B. & M. admit as only on passage in N. Africa, but small numbers winter. 130 at the Wadi Kaam 27 Feb., 1966, may have been the result of a cold weather movement from Europe. Only three were there 19 Mar.

Himantopus himantopus. Black-winged Stilt

Not uncommon on passage Mar.–May and July–Oct., though none in winter as stated by H. de B. & M. for Tunisia.

Burhinus oedicnemus. Stone Curlew

We found this species only in April, June and Aug. in widely scattered desert areas. One was seen flying in from the sea, Tripoli, 21 Oct., 1966.

Cursorius cursor. Cream-coloured Courser

A fairly common resident in steppe and sub-desert zones. Juveniles were present near the coast at the Wadi Kaam by July in 1965 and 1966. A display flight was seen over desert at 07.00 hours on 5 June, 1965; a bird was circling high in wide spirals on quick beating wings, uttering the typical "qwut-qwut" note, followed repeatedly by a low, grating sound.

Stercorarius skua. Great Skua

One flying east off the Wadi Kaam 28 Sept., 1965, is apparently the first for Libya.

Stercorarius parasiticus. Arctic Skua

One 21 Mar., 1965, two together 6 Mar., 1966, and one 26 Feb., 1967, all close to the shore off Tripoli, are the first records for Libya.

Larus canus. Common Gull

Three adults at Khoms 19 Dec., 1964, and one 13 Nov., 1965, Tripoli harbour, are the first records for Libya.

Larus audouinii. Audouin's Gull

Regular in winter, records from Aug.–April, usually met with in small groups. One concentration of 72 birds (66 adults) at Misurata 16 Jan., 1966, was exceptional.

Larus genei. Slender-billed Gull

Not uncommon in winter from Oct.–April, almost entirely around Tripoli town, though a few in coastal wadis. Up to 40 in Tripoli harbour, chiefly immatures with larger numbers of *L. ridibundus*.

Larus melanocephala. Mediterranean Gull

Winter visitor to the coast, almost confined, as mentioned by Waters (1963), to the coastal towns. Numbers vary with weather conditions. Over 200 Tripoli, 12 Dec., 1965, during a gale (15% adults).

Larus minutus. Little Gull

Usually present in small numbers in Tripoli harbour from Oct.–April. Adults, like *L. melanocephala*, were only seen in rough weather, when up to 100 were present, suggesting that they are largely pelagic outside the breeding season.

[*to be continued*]

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, C. W. Benson, c/o University Museum, Department of Zoology, Downing Street, Cambridge. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Contributions should be submitted to the Editor in duplicate and should be addressed to C. W. Benson, personally.

Authors introducing a new name or describing a new series or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s*. for years up to 1968 (Vol. 88) and 7*s*. 6*d*. for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 5*s*., payable to the Hon. Treasurer, P. Tate. 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

Bulletin of the

British Ornithologists' Club

Edited by
C. W. BENSON

Volume 89 No. 6 December 1969

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, BT., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

Prof. J. H. Elgood

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1970

20th January—Speaker: Dr. R. K. Murton. Subject: Ornithology in Hong Kong. Venue: The Criterion, Piccadilly Circus, London, W.1.

17th March—Speaker: Mr. J. R. Beck. Subject: The Birds of South Georgia and Orkney Islands. Venue: The Criterion.

19th May, 21st July, 15th September, 17th November. Speakers to be arranged. Venue: The Criterion (except in July).

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 89 No. 6 Published: 19th December, 1969

The six hundred and sixty-first meeting of the Club was held at The Criterion, Piccadilly Circus, London, W.1 on 25th November, 1969.

Chairman: Dr. J. F. Monk

Members present: 19; Guests: 7

Mr. Peter Olney addressed the Club on Avocets and their Management and illustrated his address with photographic slides.

The Müller collection of birds from northern Portuguese East Africa

by R. K. Brooke

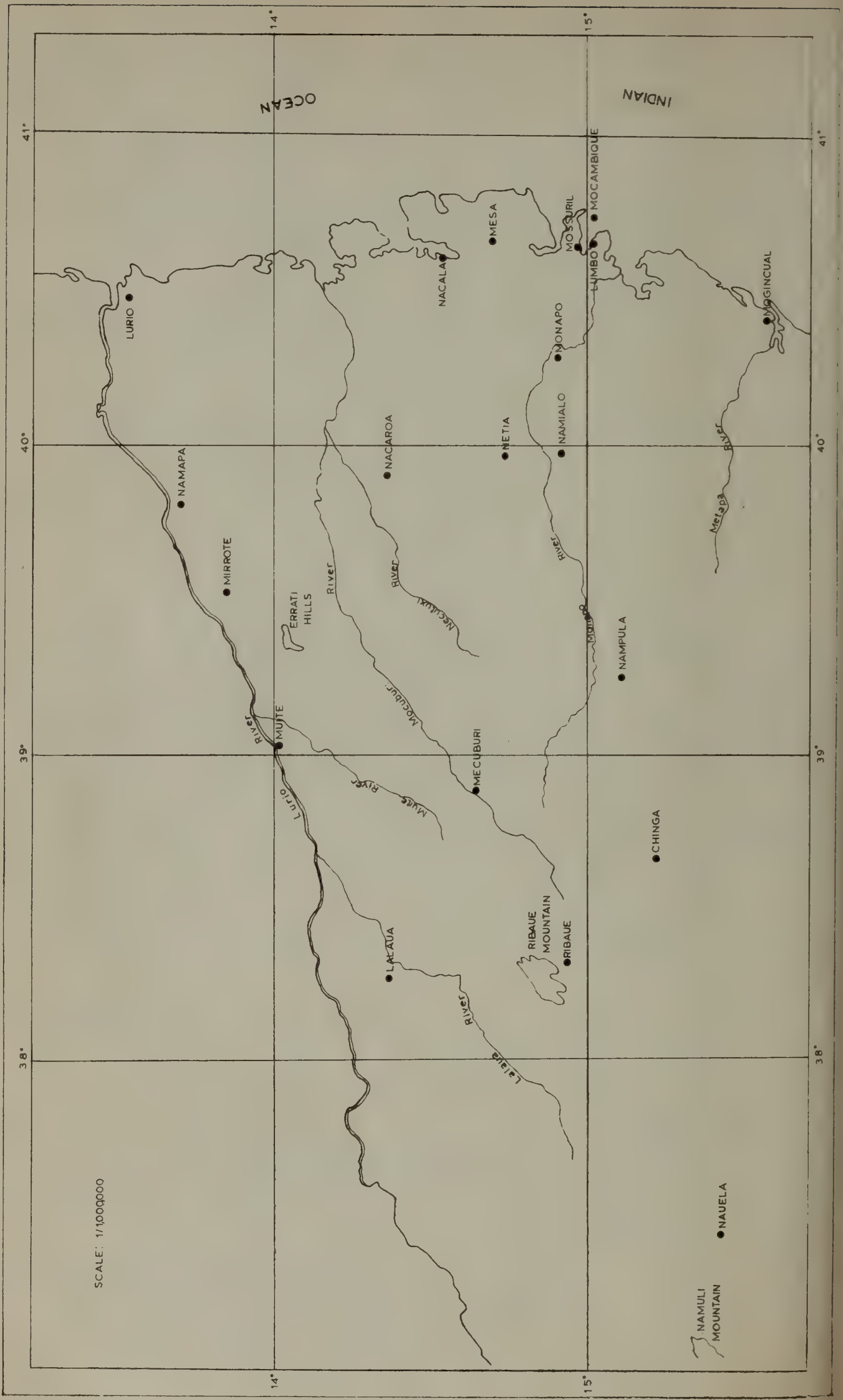
Received 18th June, 1969

INTRODUCTION

The Mozambique Province of Portuguese East Africa has not been well studied ornithologically. Col. Jack Vincent collected birds from 13th May to 2nd July, 1932, in the Province and 21st July to 10th August just across the provincial boundary on Mt. Namuli, and his detailed results were reported seriatim in the *Ibis* between 1933 and 1936. Since Vincent was interested in obtaining representative series from the major ecological areas of Portuguese East Africa, particularly east and west of the Shire Rift, he did not repeatedly collect the same species at each camp, and thus he did not collect in Mozambique Province species adequately collected in adjacent provinces. Arthur Loveridge spent July to October, 1918, at Lumbo on the coast, and collected some birds and eggs in between many other activities (Loveridge 1922). W. A. Churchill collected a few birds on the Mozambique coast (Shelley 1897). Individual specimens have been reported by Rosa Pinto (1963) and by Sacarrao (1948, 1951).

The American Museum of Natural History in New York acquired the Rothschild collection which itself contained many collections. Among these is one with labels of the Zoolog. Staatss, Munchen. all collected by H. C. Müller in Mozambique Province between 25th April and 2nd November, 1925. Dr. G. Diesselhorst, keeper of birds in the Zoologische Sammlung des Bayerischen Staates in Munich, advises (*in litt.*) that there is no record of Müller or his collection in the Museum and that nobody there knows anything about it. All that is known is what can be learnt from the species collected and their labels

The specimens are not well prepared. The great majority of the 99 species collected come from rocky hills and riparian and other thickets, and few are birds of open Miombo (the dominant vegetation of the Province according to Vincent, 1933, and Wild & Fernandes, 1968, or of cultivated ground. There is not one palaearctic migrant in the collection, despite the fact that much collecting was done in October, when these birds are making their way


OCEAN
INDIAN
41°
40°
39°
38°
14°
15°
LURIO
NAMAPA
MIRROTE
ERRATI HILLS
MUITE
River
Lurio
Muite River
Mecuburi River
MECUBURI
NACAROA
Necuruxi River
NACALA
MESA
NETIA
NAMIALO
MONAPO
River
MOSSURIL
LUMBO
MOCAMBIQUE
MOGINCUAL
Metapa River
NAMPULA
CHINGA
LALAUA
Lalaua River
RIBAUE MOUNTAIN
RIBAUE
NAUELA
NAMULI MOUNTAIN
SCALE: 1/1,000,000

south in great numbers. Müller moved about a great deal, and collected birds on all days of the week, not just weekends. He did not collect every day. There are two main conclusions that can be reasonably drawn from these facts. One is that Dr. Ernest Hartert selected and bought certain species for the Rothschild collection from a general collection from the Province made by Müller. If this is correct, one would expect the balance of the collection to be in Munich, yet we know from Dr. Diesselhorst that they never went there. Also if 99 species were chosen out of a general collection, there is no obvious reason for the selection of many of them, since they are species widespread in Africa and frequently collected. The alternative which I favour is that Hartert bought the entire collection that Müller had made incidentally while working hills and thickets for something else (insects?, plants?, rocks?).

The collection should have been reported in full when it was brought back to Europe, as then the interior of the Province was unknown ornithologically. Subsequently Vincent (1933–1936) visited the province. This paper lists those species (52) not collected by Vincent in the Province. Müller collected 47 species also collected by Vincent but not necessarily in the same districts of the Province. The order of treatment is that of Wetmore, and the nomenclature follows White's *Ethiopian Lists* except where otherwise noted. Dates are given wherever known, as it may well be that the majority of African birds are at least partially migratory.

Müller zig-zagged about the Province, as an examination of his localities and dates shows. Not all his localities have been traced (the spelling of bantu place names is germanic and written in indelible pencil), but a study of the *Atlas de Mocambique* (1962 Empresa Moderna, Lourenco Marques) has allowed a sufficient number to be traced for his area of operations to be clear, as may be seen from the map. In the following list Müller's place name appears first in so far as it can be deciphered, with the apparent alternative spellings in brackets, then the Portuguese name if known and then the co-ordinates. A study of dates of collection has allowed an informed guess as to the whereabouts of certain collecting localities, and the result is given in brackets after the statement 'unknown', which means that the place was not traced in the *Atlas de Mocambique*. No guess can be made for two localities since material from there is undated. In the Systematic List the Portuguese name is used where known and for the others Müller's name is used, as follows:—

Erati	Errati Hills	14° 03′ S, 39° 23′ E.
Lalana (Labana)	Lalaua River and District: post	14° 22′ S, 38° 16′ E.
Lima	unknown (between Nacaroa and Mecuburi)	
Luli	Lurio River	
Ncubure	Mecuburi River and District: post	14° 39′ S, 38° 53′ E.
Meza	Mesa	14° 43′ S, 40° 40′ E.
Matapa	Metapa River	15° 28′ S, 39° 58′ E.
Mnene (Muene)	unknown (between Nacaroa and Mecuburi.)	
Monabo	Monapo River and District: post	14° 55′ S, 40° 17′ E.
Muite (Mcute, Meute and Mcube)	Muite District: post	14 01′ S, 39 02′ E.
Nacaroa	Nacaroa	14° 22′ S, 39° 55′ E.

Lago Nagocha	unknown	
Namadjo (Wanaljo)	unknown (between Metapa, Mecuburi and Monapo Rivers)	
Namialo	Namialo	14° 55′ S, 39° 59′ E.
Ngube	unknown (between the Mecuburi River and the Errati Hills)	
Niapala Mtns.	unknown (Mecuburi District)	
Nicutuche (Mentuche)	Necutuxi River	14° 27′ S. 39° 32′ E.
Parara	unknown (near the Metapa River)	
Ntia	Netia District: post	14° 44′ S, 39° 58′ E.
Quenene, Luli	unknown (on the Lurio River)	
Ribaue	Ribaue	14° 54′ S, 38° 13′ E.
Segua, Luli	unknown (on the Lurio River)	
Talagassa(e)	unknown (between Nacaroa and Mecuburi)	
Tanka, Ncubure	unknown (Mecuburi District)	
Wabarrara	unknown	

The Müller collection was studied while holding a Frank M. Chapman Memorial Grant from the American Museum of Natural History. I am much obliged to Dr. Dean Amadon for the facilities granted to me.

SYSTEMATIC LIST

Nycticorax leuconotus (Wagler). White-backed Nightheron.

Mecuburi ♂ 2nd October: not seen but mentioned in Irwin and Benson (1967b).

Accipiter tachiro (Daudin). African Goshawk.

Mecuburi ♂ juv. 27th September, ♂ ad. 1st November, wing 211 mm. Mecuburi falls clearly within the range of the northern *sparsimfasciatus* (Reichenow), but the adult bird looks like the nominate race, being markedly chestnut on the thighs and with rufous brown barring on the abdomen.

Hieraaetus spilogaster (Bonaparte). African Hawkeagle.

Mecuburi ♂ 7th October.

Polyboroides radiatus typus (Smith). Gymnogene.

Monapo River ♂ 13th July; Lima ♂ 19th October.

Falco dickinsoni Sclater. Dickinson's Grey Kestrel.

Mecuburi ♀ 20th October.

Francolinus shelleyi shelleyi Ogilvie-Grant. Shelley's Francolin.

Necutuxi River o 26th June.

Turtur tympanistria (Temminck). Tambourine Dove.

Mecuburi ♂ ad., ♂ juv. 19th September, ♂ 15th October; Mnene ♂♂ 17th October.

Treron australis salvadorii (Dubois). African Green Pigeon.

Namialo ♂♀ 12th July.

Poicephalus robustus suahelicus Reichenow. Brown-headed Parrot.

Muite ♂ 10th July.

Ceuthmochares aereus australis Sharpe. Green Coucal.

Mecuburi ♂♂ 22nd September and 28th October.

Tyto alba affinis (Blyth). Barn Owl.

Muite ♂ 4th July.

Otus leucotis granti (Kollibay). White eared-Owlet.

Metapa River ♂♀ 18th August.

Ciccaba woodfordii woodfordii (Smith). Bush Owl.

Ribaue ♂ no date (25th April?); Mecuburi ♂ 1st October.

Glaucidium capense capense (Smith). Barred Owlet.

Muite ♂ 5th June; Mecuburi ♂♂ 1st and 15th October; Talagassa ♂ 17th October. The museum register mentions a specimen without date from Nguru: neither locality nor specimen have been traced.

Bubo africanus africanus (Temminck). Spotted Eagleowl.

Lalaua ♂ 2nd May; Muite ♀ with enlarged ovary 4th July; Namadjo ♂♂ 8th August and 9th September; Niapala Mountains ♀ 24th October. The birds from Lalaua and Muite and the September bird from Namadjo are all the rufescent phase.

Apus aequatorialis aequatorialis (von Müller). Mottled Swift.

Ribaue ♂♂ no date (25th April?—see next species).

Apus barbatus barbatus (Sclater). African Black Swift.

Ribaue ♂ 25th April, wing 184 mm. This is the first record of the nominate race north of the Zambezi. One would have expected the smaller and darker *A. b. roehli* Reichenow which Vincent (1934: 795) collected near Mt. Mlanje on the Portuguese/Malawi border to the southwest of Ribaue. He saw this species (race undetermined) on Mt. Namuli.

Apus affinis (Gray). Little Swift.

Nacaroa ♀♀ 18th October. I shall show (in prep for *Durban Mus. Novit*). that this specimen belongs to an unnamed subspecies.

Chaetura (*Neafrapus*) *boehmi sheppardi* (Roberts). Bat-like Spinetail.

Lurio River o 1st June; Necutuxi River ♀ 28th June; Lima ♂ 19th October. The racial name follows Brooke (1966), where these specimens are mentioned

Apaloderma narina (Stephens). Narina Trogon.

Ngube ♂ 10th October, wing 131 mm., which makes it intermediate between the nominate race and *littorale* van Someren.

Alcedo semitorquata Swainson. Half-collared Kingfisher.

Lago Nagocha ♂ imm. no date.

Merops boehmi Reichenow. Boehm's Bee-eater.

Segua ♂♀ 18th May: also mentioned in Irwin and Benson (1967a).

Merops hirundineus hirundineus Lichtenstein. Swallow-tailed Bee-eater.

Namadjo ♂♂ 2nd September; Nacaroa o 14th October.

Merops superciliosus superciliosus L. Blue-cheeked Bee-eater.

Mecuburi ♀♀ 22nd September, ♂ 7th October; Nacaroa ♀ 16th October.

Eurystomus glaucurus suahelicus Neumann. Cinnamon Roller.

Mecuburi ♀ 28th October.

Buccanodon leucotis (Sundevall). White-eared Barbet.

Monapo River ♀ 14th July; Namadjo ♀ 3rd September; Lima ♂ with enlarged gonads 19th October. All these resemble the Malawi birds described by Irwin (1957), and are intermediate between the nominate race and *kilimense* (Shelley).

Trachyphonus vaillantii Ranzani. Crested Barbet.

Talagassa ♂ 17th October.

Mirafra rufocinnamomea fischeri (Reichenow). Flappet Lark.

Namadjo ♀ 15th September; Nacaroa ♂ 18th October.

Hirundo fuligula fusciventris (Vincent). Rock Martin.

Muite ♂ 7th July.

Psalidoprocne pristoptera orientalis. (Reichenow). African Saw-winged Swallow.

Mecuburi ♂♂ ad. and imm. 30th October.

Coracina pectoralis (Jardine & Selby).

Quenene ♀ 24th May.

Dicrurus adsimilis adsimilis (Bechstein). Fork-tailed Drongo.

Lalaua ♀ 27th May, wing 123mm.; Necutuxi River ♀ 22nd June, wing 121; Namadjo 2nd August ♀, wing 117, o, wing 121, ♀ in post juvenal moult, wing 121 mm. Also mentioned in Vaurie (1949.)

Parus rufiventris Bocage. Rufous-bellied Tit.

Namadjo ♂o 8th August; Errati Hills o 12th October; according to the museum register—no material seen.

Phyllastrephus flavostriatus tenuirostris (Fischer & Reichenow). Yellow-streaked Bulbul.

Mecuburi ♂ 20th June.

Oenanthe pileata (Gmelin). Capped Wheatear.

Netia ♂ 11th July.

Myrmecocichla arnoti arnoti (Tristram). Arnot's Chat.

Muite ♀ 10th June; Namadjo ♀ 2nd August; Mecuburi ♂ 2nd October, ♂♀ 26th October'.

Cossypha heuglini intermedia (Cabanis). Heuglin's Robin.

Mnene ♀ 17th October, wing 86 mm. The race has been determined on the label by P. A. Clancey, Director of the Durban Museum.

Cisticola fulvicapilla muelleri Alexander. Neddicky.

Lima ♀ 14th October; Namadjo ♂ 2nd November.

Camaroptera stierlingi stierlingi (Reichenow). Eastern Barred Wren-warbler.

Namadjo ♀♀ 2nd and 8th August, ♂ 15th September.

Melaenornis pammelaina (Stanley). Black Flycatcher.

Necutuxi River ♀ 26th June; Namadjo ♀ 2nd August; Parara ♀ 25th August; Nacaroa ♀ 14th October; Talagassa o♀ 17th October.

Prionops plumata poliocephala (Stanley). White Helmetshrike.

Lalaua ♀ 28th May, wing 105 mm.; Necutuxi River o 26th June, wing 105; Metapa River ♀ with large brood patch 19th August, wing 106 mm.

Prionops scopifrons scopifrons (Peters). Chestnut-fronted Helmetshrike.

Necutuxi River ♂ 29th June; Namadjo ♀ 13th August; Metapa River ♀♀ 24th August. Two birds from the Metapa River are recorded in the museum register but only one was seen, an immature bird.

Prionops retzii tricolor (Gray). Black Helmetshrike.

Mecuburi ♀ 20th June; Namadjo ♂♀ 13th August, ♂ imm. 2nd September.

Cinnyricinclus leucogaster verreauxi (Bocage). Amethyst Starling.

Mecuburi ♀ 7th October; Errati Hills ♂ 12th October; Talagassa ♂♂♀ 17th October; Tanka ♀ 28th October.

Anthreptes longuemarei nyassae Neumann. Violet-backed Sunbird.

Errati Hills ♂♂♀ 12th October; Namadjo ♀ 2nd November.

Nectarinia mediocris (Shelley). Eastern Double-collared Sunbird.

Errati Hills ♂ 12th October, according to the museum register: not seen.

Zosterops senegalensis anderssoni (Shelley). Yellow Whiteeye.

Mecuburi ♂ 26th September; Errati Hills ♀ 12th October.

Plocepasser mahali pectoralis (Peters). White-browed Sparrowweaver.

Muite ♂ 4th June. Clancey (1968) has recorded this race from Lalaua.

Petronia superciliaris (Blyth). Yellow-throated Sparrow.

Necutuxi River ♀ 26th June; Mecuburi ♂ 26th October.

Serinus mozambicus mozambicus (Müller). Yellow-eyed Canary.

Tanka ♂ 26th September.

Emberiza flaviventris kalaharica (Roberts). Golden-breasted Bunting.
Tanka ♂ 28th October.

Emberiza cabanisi orientalis (Shelley). Cabanis's Yellow Bunting.
Namadjo ♂♂ 2nd and 8th August.

References:

Brooke, R. K. 1966. The Bat-like Spinetail *Chaetura boehmi* Schalow (Aves). *Arnoldia (Rhodesia)* 2 (29).

Clancey, P. A. 1968. On geographical variation in the Whitebrowed Sparrow-Weaver *Plocepasser mahali* Smith of Africa. *Bonn. Zool. Beitr.* 19 (3/4): 257-268.

Irwin, M. P. S. 1957. Description of a new race of *Buccanodon leucotis* from southern Portuguese East Africa and eastern Southern Rhodesia. *Bull. Brit. Orn. Cl.* 77: 57-58.

Irwin, M. P. S. & Benson, C. W. 1967a. Notes on the birds of Zambia: Part III. *Arnoldia (Rhodesia)* 3 (4).

Irwin, M. P. S. & Benson, C. W. 1967b. Notes on the birds of Zambia: Part IV. *Arnoldia (Rhodesia)* 3 (8).

Loveridge, A. 1922. Notes on east African birds (chiefly nesting habits and stomach contents) collected 1915-1919. *Proc. Zool. Soc. Lond.*: 837-862.

Rosa Pinto, A. A. da 1963. Notas sobre uma recente coleccao de aves de Mocambique do Museu Dr. Alvaro de Castro, com a descricao de duas novas subespecies. *Mem. Inst. Invest. Cient. Mocamb.* 5: 31-49.

Sacarrao, G. F. 1948. Contribuicao para o estudo das aves de Mocambique II. *Arquiv. Mus. Bocage* XIX: 1-44.

Sacarrao, G. F. 1951. Contribuicao para o estudo das aves de Mocambique III. *Arquiv. Mus. Bocage* XXII: 39-52.

Shelley, G. E. 1897. Exhibition of, and remarks upon a collection of bird-skins formed by Mr. W. A. Churchill at Mozambique. *Proc. Zool. Soc. Lond.*: 188-189.

Vaurie, C. 1949 A revision of the bird family Dicruridae. *Bull. Amer. Mus. Nat. Hist.* 93: 199-342.

Vincent, J. 1933-1036. The birds of northern Portuguese East Africa. Comprising a list of, and observations on, the collections made during the British Museum Expidition of 1931-32. *Ibis* 1933: 611-652; 1934: 126-160, 305-340, 495-527, 757-799; 1935: 1-37, 355-397, 485-529, 707-762; 1946: 48-125.

Wild, H. & Fernandes, A. 1968. Vegetation map of the Flora Zambesiaca area. *Flora Zambesiaca* Suppl.

Notes on Tripolitanian Birds

by Graham Bundy and John H. Morgan

(PART II)

Received 27th June, 1969

Chlidonias niger. Black Tern

Rare in April and May along the coast, but common in Aug. and Sept., often up to 150 in Tripoli harbour. Two were seen flying south over steppe at Idris airport 5 Sept., 1964. Latest was a single bird, Wadi Kaam, 19 Dec., 1965.

Chlidonias leucoptera. White-winged Black Tern

The statement in E. & H. that this species is commoner in spring is probably due to it being overlooked in autumn plumage. In coastal localities uncommon April and May, not uncommon Aug. – late Sept.

Chlidonias hybrida. Whiskered Tern

Uncommon, only seen July–Sept. at coastal wadis. Breeds in Tunisia, where there is also a double passage (H. de B. & M.).

Gelochelidon nilotica. Gull-billed Tern

A small but regular passage occurs along the coast Mar.–May and July–Sept. No evidence to support Johnson's claim that it winters in Tripoli harbour.

Hydroprogne tschegrava. Caspian Tern

In the Pisida area, close to the Tunisian border, it was present throughout the winter until May in both years 1965 and 1966. Further east along the coast it is chiefly an uncommon passage migrant, Aug. to Nov. and in May.

Sterna bengalensis. Lesser Crested Tern

Fairly common along the coast Sept.–Nov. and especially June and July. In June a regular easterly passage occurs all along the Tripoli coast. Breeds Gulf of Sirte and probably Tunisia (H. de B. & M.). Adults were feeding flying juveniles at Wadi Kaam 6 Oct., 1965.

Sterna dougallii. Roseate Tern

Uncommon, seen once in April, but fairly regularly in Tripoli harbour Aug.–Oct., with a maximum of 10 there 22 Sept., 1965. H. de B. & M. state no passage in Mediterranean; these would appear to be the first for Libya.

Sterna albifrons. Little Tern

Present locally along the coast from April–Oct. A pair were feeding chicks, Wadi Kaam during June, 1965, and there were flying juveniles, Tripoli harbour, Aug., 1965 and 1966. Breeds Tunisia (H. de B. & M.), but apparently not proved breeding in Tripolitania before.

Pterocles senegallus. Spotted Sandgrouse

The commonest sandgrouse in Tripolitania, found in many sub-desert areas in every month. Seen in flocks of up to 250 at watering places, usually, like other *Pterocles* spp. arriving from two hours after dawn, occasionally at dusk also. All four *Pterocles*, *P. coronatus*, *P. alchata*, *P. orientalis* and the present species, especially frequent the Wadi Kaam, more often in the near-rainless months from June–Sept.

Cuculus canorus. Cuckoo

Our only record, one Wadi Kaam 4 April, 1965. Only others 4 Feb. (Guichard, 1956), 24 April (Johnson, 1949) and 21 April, 1935, and 5 May, 1935 (Moltoni, 1938).

Apus apus. Swift

Uncommon passage migrant, recorded in April, Aug., and once in Nov. No evidence of breeding as shown in E. & H.

Apus pallidus. Pallid Swift

Summer visitor, very common from Mar.–Sept., less common Jan., Feb. and Oct. Frequents towns, especially Tripoli, and the cliffs on the Jebel Nafusa escarpment. Young were still being fed in nest at Idris 14 Sept., 1964, though most had left by this date.

Apus melba. Alpine Swift

Passage migrant, not uncommon Mar.–April and July–Oct. In spring some birds were seen coasting east.

Apus affinis. Little Swift

Records from Feb.–July, mainly Feb.–April, uncommon though once about 100 near Jefren April, 1967.

Merops apiaster. Bee-eater

A few pairs breed on the coastal plain, south to the escarpment near Garian, and east to Garrabulli. Common passage migrant April and May, autumn passage less marked and obscured by breeding birds. Not previously recorded breeding east of Tunisia.

Upupa epops. Hoopoe

Present throughout the year, breeding in the coastal zone Mar.–July. Spring passage, obscured by breeding birds, is not very noticeable, only a few birds in desert areas which were unlikely nesting places. At Idris numbers built up in Aug. and Sept. on a small watered cricket pitch of about an acre, around which some six pairs bred in buildings; whether they were migrants or locally bred birds congregating in an unusually favourable place is unknown. Numbers often exceeded 100 during this period, with up to 172 on 9 Sept., 1965. By early Oct. only the wintering population, usually around 10 birds, remained.

Rhamphocorys clot-bey. Thick-billed Lark

Extends further east than shown on the map in E. & H., at least to Sirte coast, 16° E. Has a sharp "prit" flight note, not unlike *Emberiza calandra*, a thin, ascending trill, and a more drawn-out little whistling note, also ascending in pitch.

Melanocorypha calandra. Calandra Lark

The indication by E. & H. that it breeds throughout northern Tripolitania is not supported by our observations. In Tunisia uncommon east of Gabes (H. de B. & M.). Our only record was two at Idris, 15 Oct., 1964.

Galerida theklae. Thekla Lark

Extends south to Jebel Waddan (29° N. 16° E.) (further south than indicated by E. & H.), where it is local and *G. cristata* is absent. *G. theklae* had young just out of nest, Bugellian, by 12 June, 1965. Absent near the coast except in hills near Khoms.

Lullula arborea. Woodlark

Four records Nov.–Feb. possibly from Tunisia, where it breeds (H. de B. & M.).

Chersophilus duponti. Dupont's Lark

Extends further east, Tawarga (32° N. 15° E.), than shown in E. & H. map. Occurs south to Beni Ulid (32° N. 14° E.). Commonest note by which it can usually be located is a disyllabic "coo-chic" or "pu-chee", the second syllable rising sharply, rather "creaky" and nasal in quality, and uttered both in flight and on the ground.

Hirundo rustica. Barn Swallow

More numerous than the "common" of Moreau, in spring and equally in autumn, a few lingering until early Dec. Two at Wadi Kaam 5 Dec., 1965, were moulting tail and primaries and could scarcely have made a desert crossing. Two at Tawarga 16 Jan., 1966. A few pairs breed in and around Tripoli town, as suspected by Guichard (1957).

Hirundo daurica. Red-rumped Swallow

Not uncommon in spring, absent in autumn. Guichard saw only two, hence its "rare" status in E. & H. Has occurred autumn, Tunisia (H. de B. & M.). We found it regularly in the coastal zone from Mar. until mid-May, up to 20 together 19 Mar., 1965.

Hirundo obsoleta. Pale Crag Martin

Up to 4 around the castle at Sebha (Fezzan) 18, 19 Jan., 1966. It lacks the dark axillaries which show up well on *H. rupestris* when seen from below. One bird continually dived at another which was perched on a wall, eventually mounting it and copulating without ceremony, before gliding away again.

Anthus spinoletta. Water Pipit

Uncommon winter visitor to the coast, Tripoli area, and the wadis Turgat and Kaam. Records from Nov. until April. Apparently the first noted in this area.

Lanius senator. Woodchat

What are probably local breeding birds arrive in coastal zone late Feb., but they are not numerous and the heavy spring passage is very marked. Seen feeding young June and July, 1965 and 1966. No evidence of any autumn passage, although immatures were seen as late as 17 Oct., no adults were seen after mid-Aug. An adult *L. s. badius* was found dead in Tripoli 27 April, 1965.

Lanius collurio. Red-backed Shrike

An immature at Sabratha 16 Oct., 1965, the second for Tripolitania.

Lanius excubitor. Great Grey Shrike

Common resident in coastal zone, but does not appear to extend far into desert, not found nesting south of about 30° N. Seen competing territorially with *L. senator*; the latter's scarcity as a breeding species may possibly be attributed to this. One nest in sub-desert scrub held c/4 on 24 April, 1965; juveniles had left another nest by 5 May, 1965.

Lanius minor. Lesser Grey Shrike

Three in Khoms area 11/12 Sept., 1965, the first since Snow and Manning (1954).

Prunella modularis. Dunnock

Up to 3 at Sabratha in Jan. and Feb., 1965, and one at Jefren 13 Mar., 1965. These are the only records for Libya. H. de B. & M. call it regular in N. Tunisia and rare in Central Tunisia.

Hippolais pallida. Olivaceous Warbler

Locally common in coastal zone and oasis towns, almost exclusively in tamarisk, not usually common until mid-May. Most have gone by mid-Sept., some were already in heavy moult in mid-Aug. Many in reeds Wadi Kaam on 15/16 July, 1965, were unusual.

Sylvia hortensis. Orphean Warbler

Summer visitor, scarce and local. Earliest date 3 Mar., latest 14 Sept. Fledglings had just left a nest at Idris on 1 July, 1965. No evidence of passage.

Sylvia rüppelli. Rüppell's Warbler

Up to 3 males each spring at the Wadi Kaam, extreme dates 19 Mar. and 10 April.

Sylvia melanocephala. Sardinian Warbler

Winter visitor. Very common 1964/65, uncommon 1965/66. A few males were singing Feb., 1965, and in 1966 a pair probably bred in introduced acacia scrub near Tripoli.

Sylvia cantillans. Subalpine Warbler

A male at Sebha 18/19 Jan., 1966. See also Table I.

Sylvia deserticola. Tristram's Warbler

At least 10 in roadside tamarisk scrub, Waddan (29° N. 16° E.), 17 Jan., two at nearby Socha same day, and two Sebha 18/19 Jan., 1966. Can hardly be confused with *S. undata*, having the proportions of *S. cantillans*. Its presence is often betrayed by a quiet "tack-tack", while several were heard singing at Waddan on 17 Jan. Some display was seen there, one pursuing another through some palm scrub, with half-open, quivering wings, uttering a "tacking" rattle. The song is a series of hard "tack" or "chit" notes, with intermingled squeaky trills, typically sylviid in character.

Sylvia sarda. Marmora's Warbler

Not uncommon between 10 Nov., 1964, and 3 Mar., 1965, from coast (Sabratha east to Wadi Kaam) to arid, bushy plains south of Azizia. Absent 1965/66. Present in small numbers again 1966/67.

Phylloscopus bonelli. Bonelli's Warbler

Not uncommon in coastal "green belt" Mar.–April, none seen in autumn.

Regulus ignicapillus. Firecrest

Libya is not mentioned by E. & H. or H. de B. & M., though Guichard (1955) records one. It is uncommon in the "green belt" along the coast and absent some winters. Most together 10+ in pines near Tarhuna, 13 Jan., 1966.

Cisticola juncidis. Fan-tailed Warbler

More than 20 at Tawarga, Jan., 1966, when birds were singing all over the rough marsh west of the oasis. Not seen in this locality in Feb. and April, 1965. Only previous record, one (?) Wadi Kaam, 14 April, 1935 (Moltoni, 1938).

Scotocerca inquieta. Scrub Warbler

Mentioned by Whittaker (1902) and Cavazza (1932), but though we made special searches for this, and *Sylvia nana*, we saw none, and it would seem that the map in E. & H. exaggerates its range in this area.

Ficedula parva. Red-breasted Flycatcher

Uncommon but regular in autumn, extreme dates 10 Oct. and 9 Nov., in various coastal localities. Most were 5 at Idris, 13 Oct., 1965. None in spring.

Oenanthe deserti. Desert Wheatear

Present throughout the year, fairly common in stony sub-desert, but also on sebka (salt flats) near Tawarga and Misurata. Apparently present only April – Oct. in Tunisia (H. de B. & M.). A pair were feeding small young by 4 April, 1965.

Oenanthe isabellina. *i*sabelline Wheatear

Fairly common on passage from coast south to at least 31° N. Latest in spring was one Tawarga area 25 April, 1965. One presumably wintering at Sebha oasis 18 Jan., 1966, was uttering a warbling sub-song when located.

Oenanthe leucura. Black Wheatear

Only found on the hills near Khoms and along the high escarpment that extends from here S.W. to the Tunisian border. Replaced in the desert south of 31° N. by *O. leucopyga.* A fledgling seen Bugellian, 17 April, 1965.

Oenanthe lugens. Mourning Wheatear

Distribution as in E. & H. but also further north at Giosc, Jefren and Beni Ulid. In addition to the usual desolate desert habitat, it seems to like masonry, especially road bridges over rocky, dry wadi beds, and sometimes old buildings in villages such as Giosc, Beni Ulid and Sebha. Two males at Giosc were uttering a quiet, warbling sub-song on 8 Oct., 1965. Typical song is a simple, thin, subdued trill, descending in pitch. On 2 May, 1965, display was seen north of Mizda. The male adopted an upright posture and pranced around a crouching, wing-shivering female several times, before attempting to mount her. A rapid aerial pursuit then took place before they pitched and copulated.

Monticola solitarius. Blue Rock Thrush

Though shown to breed throughout the north by E. & H. we have no evidence to support this. Common winter visitor, south to the Fezzan, extreme dates 6 Sept. and 10 April.

Monticola saxatilis. Rock Thrush

Not uncommon late Mar. – early May, only one in autumn; an immature Wadi Kaam 28 Sept., 1965. Guichard (1956) reported a few in winter, but we saw none.

Phoenicurus ochruros. Black Redstart

Not uncommon winter visitor from Oct.–Mar., single birds seen at Hon and Sebha oases, Jan., 1966, further south than illustrated by E. & H.

Phoenicurus moussieri. Moussier's Redstart

Not uncommon in winter from Tunisian border east to Wadi Kaam. Caunter (pers. comm.) strongly suspected breeding at Garian in 1955.

Luscinia luscinia. Thrush Nightingale

One at Wadi Kaam 4 April, 1965, was singing. One in a Tripoli garden 15 April, 1965. The only records for the area.

Turdus pilaris. Fieldfare

Called rare throughout N. Africa by E. & H., though H. de B. & M. mention records from Cyrenaica and Tunisia in hard winters. In 1965/66, it was present from 28 Oct. – 6 Mar. all along the coastal zone south to Jefren, maximum 40 Wadi Kaam from 14 Nov. – 5 Dec.

Turdus viscivorus. Mistle Thrush

A flock of about 30 near the coast 10 Feb., 1965, the only record except one in Oct., 1935 (Moltoni, 1938).

Parus caeruleus. Blue Tit

In contrast to Cyrenaica, not yet recorded anywhere in Tripolitania, nor at Gabes (H. de B. & M.), despite the map in E. & H., which shows it breeding throughout the northern quarter of Libya.

Turdoides fulvus. Fulvous Babbler

Juveniles were just out of nest at Idris, 24 Mar., 1966. An adult performed an elaborate distraction display, hopping towards the observer to within a few yards, then away, holding the short rounded wings up over the back. It repeatedly uttered an excited, descending trilling note.

Emberiza calandra. Corn Bunting

Common on steppe, especially around barley plots, from late Feb. until April, males singing. Not seen May–Aug., after which they re-appear. Sometimes in flocks up to 40 near the coast, Nov.–Feb. E. & H. show it as breeding in the north, but this requires confirmation.

Emberiza striolata. House Bunting

Very local and seemingly confined to a few old escarpment towns from Jefren west to the Tunis border. Males were singing in Mar.

Emberiza schoeniclus. Reed Bunting

Records near the coast, Nov.–Feb. 5 together at Leptis Magna, 19 Dec., 1964, was the most seen. The first for Libya.

Fringilla coelebs. Chaffinch

H. de B. & M. state "it does not nest in Tripoli", but *F. c. spodiogenys* is resident in the Jebel Nafusa, as in east Tunisia. It does not appear to extend further east than Garian, frequenting especially the olive groves on the escarpment ridge. Winter visitors to the coast are fairly common Nov.–Mar., and show the characters of European birds, possibly *F. c. coelebs*, though none were obtained.

Passer domesticus. House Sparrow

In Tripoli town birds resemble *P. d. italiae*, with much less black than typical *P. hispaniolensis*.

Passer hispaniolensis. Spanish Sparrow

Extends further south than illustrated in E. & H. Common in all oasis towns. Dawn post-roosting flights totalled about 650 birds at Sebha oases (27° N.) on 18 Jan., 1966, indicating its abundance and success even in such an isolated area.

Passer simplex. Desert Sparrow

Small populations at Waddan and Hon, as well as Sebha, are further north and east than on map in E. & H., though mentioned by H. de B. & M. It associates with *P. hispaniolensis* but keeps chiefly to outskirts of oases, in dunes and date palms. Pairs were seen inspecting potential nest holes and displaying, at Sebha, 19 Jan., 1966; the males excitedly hopping after a female, with outstretched, shivering wings. Calls are all softer and more musical than *P. hispaniolensis*. In flight a quiet twitter, and a soft "jip" note, both reminiscent of *Carduelis chloris*. Also a short chatter and a "chirrup", ascending in pitch.

Petronia petronia. Rock Sparrow

Resident on the coastal plain south to the Jebel Nafusa escarpment, where it is especially common. At Idris about 20 pairs nested in buildings, and hollow metal goal posts. Seen successfully competing with *Passer hispaniolensis* for sites, though most *hispaniolensis* nest in trees and are not so dependent on such sites.

Corvus corax. Raven

Some birds near the coast and in sub-desert in winter have brown underwings, though they conform in other respects to this species. They were thought to be intermediate *C. corax*/*C. ruficollis*. *C. ruficollis* sometimes overlaps with *corax* south of Tawarga at about 31° N., which is the northernmost extent of its desert range. Otherwise the maps in E. & H. agree closely with our observations there.

Table I compares the status of individual species which Moreau (1961) inferred from inadequate published information, with our records. Occurrence in transit with no indication of abundance is denoted by "p". See page (140) for explanation of authors' abundance ratings.

TABLE I

Frequency of selected migrants in Tripolitania

Species	Moreau (1961)		Authors	
	Spring	*Autumn*	*Spring*	*Autumn*
Falco vespertinus	p	—	not uncommon	—
F. subbuteo	rare	rare	uncommon	uncommon
**Streptopelia turtur*	rather uncommon	rather uncommon	common	uncommon
Coracias garrulus	common	rare	common	uncommon
Jynx torquilla	rather uncommon	rather uncommon	common	fairly common

Calandrella cinerea	common	—	common	common
*_Hirundo rustica_	common	rather uncommon	common	common
Delichon urbica	rather uncommon	—	common	fairly common
Riparia riparia	common	rather uncommon	common	common
Luscinia megarhynchos	rather uncommon	—	fairly common	—
Acrocephalus arundinaceus	p	p	uncommon	rare
A. scirpaceus	p	p	uncommon	rare
A. schoenobaenus	rather uncommon	rare	common	not uncommon
Hippolais icterina	rather uncommon	—	common	uncommon
Sylvia borin	common	rather uncommon	common	fairly common
S. cantillans	common	rather uncommon	common	uncommon
Phylloscopus sibilatrix	rather uncommon	rare	common	not uncommon
Ficedula hypoleuca	common	—	common	not uncommon
F. albicollis	common	—	fairly common	rare
Anthus campestris	rather uncommon	rare	common	not uncommon
A. trivialis	common	p	common	not uncommon
*_Lanius senator_	rather uncommon	p	common	uncommon

* indicates migrants, especially in autumn; may be obscured by small breeding populations.

SUMMARY

Notes are given for 122 species out of 235 recorded during a three-year period spent in north-west Libya (Tripolitania), where observations varied from previous literature. Quantitative comparisons have been attempted for migrants between spring and autumn.

ACKNOWLEDGMENTS

We would like to thank the editors of *British Birds* for publishing our request for unpublished records. Also R. E. Moreau, W. R. P. Bourne and K. D. Smith, who read this paper and criticised helpfully; and Dr W. E. Waters who supplied some translations of Italian papers. We are grateful to the following who helped, or provided records which contributed to the preparation of a full check-list: K. Atkin, G. Blackwell, J. V. Boys, Mrs. C. A. Bundy, A. Cadman, Maj. J. R. L. Caunter, S. Cramp, J. De Rios, M. Jones, Gen. Sir Gerald Lathbury, Maj. B. McBooth, H. Pease and Dr. W. E. Waters.

References:

Cavazza, F. 1932. Osservazioni Sulli uccelli della Tripolitania. *Riv. Ital. Orn.* II, 2: 155–209.

Etchécopar, R. D. and Hue, F. 1967. *The birds of north Africa.* London. Oliver and Boyd.

Guichard, K. M. 1956. Observations on wintering birds near Tripoli, Libya. *Ibis* 98: 311–316.

— 1957. The spring migration in Tripolitania. *Ibis* 99: 106–114.

Heim de Balsac, H. and Mayaud, N. 1962. *Les oiseaux du nord-ouest de l'Afrique.* Paris. Paul Lechevalier.

Johnson, G. F. 1949. Bird Life in Tripolitania. *Household Brigade Mag.:* 156–159, 218–219.

Moltoni, E. 1934a. Uccelli catturati ed osservati nei clintori di Tripoli (10/11 Novembre, 1933). *Riv. Ital. Orn.* II, 4: 11–31.

— 1934b. Piccolo contributo all'avifauna della Tripolitania. *Riv. Ital. Orn.* II, 5: 127–176.

— 1938. Contributo alla conoscenza dell'ornito fauna Libica. *Riv. Ital. Orn.* II, 8: 101–127.

Moreau, R. E. 1961. Problems of Mediterranean – Saharan migration. *Ibis* 103a: 373–427; 580–623.
Smith, K. D. On the birds of Morocco. *Ibis* 107: 493–526.
Snow, D. W. and Manning, A. W. G. 1954. Observations sur la migration d'automne en Tunisie et Tripolitaine et dans le Fezzan (1953). *Alauda* 22: 1–24.
Stanford, J. K. 1954. A survey of the ornithology of Northern Libya. *Ibis* 96: 449–473; 606–624.
Waters, W. E. 1963. Observations on wintering birds and spring migrants in Tripolitania. *Ibis* 105: 179–184.
Whittaker, J. I. S. 1902. On a small collection of birds from Tripoli. *Ibis* (8): 643–656.
Vaurie, C. 1959–65. *The birds of the palearctic fauna*. London. H. F. & G. Witherby.

The function of the pale egg colour of the Jackdaw

by David Holyoak

Received 28th October, 1969

The Jackdaw *Corvus monedula* is the only member of the genus *Corvus* to nest in holes (other than its close relative *Corvus dauricus*), and its eggs are paler than those of the other members of the genus. There are many other examples of a pale or white egg colour being associated with hole-nesting, and Lack (1958) has shown that members of the Turdinae have paler eggs even in partly enclosed nest sites than when nesting in the open. It has been suggested that the eggs of hole-nesting birds are paler than those of related species nesting in open sites either to enable the birds to see the eggs more clearly in a dark hole, or because there is no need for marked eggs in holes, so that the markings have been lost in the course of evolution.

While making routine observations on a number of Jackdaw nests near Tring, Hertfordshire in May and June 1967 I noticed that after heavy rain many of the eggs became badly discoloured with mud from the birds' feet, making it difficult to count them without removing them from the nest-hole. In five clutches where the eggs were noted as being heavily soiled (22 eggs) three eggs were found holed and at least nine disappeared from the nest before they were due to hatch—an unusually high rate of loss. In June, 1968, I tested whether the colour of the eggs affected the rate of loss by painting ten clutches with black pen ink (47 eggs) and leaving another nine clutches (41 eggs) unmarked. Of these, 12 of the black eggs were found holed by the birds' feet, and 28 disappeared (presumably removed from the nest after being damaged) before hatching was due. Five young were seen, and two eggs or young disappeared around hatching time. The eggs that disappeared went one at a time from the clutch in most cases. Of the controls, none were found holed, one clutch of four eggs disappeared before hatching was possible, and eight eggs or small young disappeared at around hatching time.

The difference between the success rate of the blackened eggs and the normal, pale-coloured eggs is statistically significant ($P < .001$), and suggests that more of the darkened eggs were being lost because of accidental breakages, so that the normal pale egg colour would appear to be of selective advantage because it enables the birds to see the eggs more clearly in the half-light of the nest hole. It would also suggest that sight plays an important part either in nest location within the hole, or at least in the Jackdaw, in the movements associated with egg-turning or settling onto the eggs.

Reference:
Lack, D. 1958. The significance of the colour of Turdine eggs. *Ibis* 100: 145–166.

Comments on an intersexual bulbul

by G. W. Storey and James M. Harrison

Received 28th June, 1969

Through the kindness of Dr. M. B. Markus, we have been given the opportunity of studying the gonads from a specimen of a Red-eyed Bulbul, one of seven adults collected in the south-western Transvaal on 18th July, 1966, and racially resembling *Pycnonotus nigricans superior* Clancey.

Markus (1966) comments "The gonads of no. 1 were abnormal in certain respects, and further reference to this individual will be made elsewhere"; hence the present note. With regard to this specimen, Dr. Markus (pers. comm. to J.M.H., 27.5.68) writes as follows:

"Specimen 1 appeared to have a right testis (?) about 2.5 × 1.5 mm. and a left ovary (?), ovotestis (?). Cranially both adrenals were clearly visible, but the region where the accessory sex glands are normally situated had been damaged by shot. The bird appeared to be almost gynandromorphic in that the wing on the 'ovarian' side was almost 3.0 mm. shorter than the wing on the 'testicular' side. There were no differences between the left and right wings of five of the other bulbuls secured on the same day (measurements are to the nearest 0.5 mm.). Wings of ♂♂ *Pycnonotus* in the Transvaal tend to average longer than those of ♀♀. *P. barbatus* is not sexually dimorphic with regard to plumage."

Clancey (1964) gives comparative differences between *P. nigricans superior* and *P. barbatus tenebrior* Clancey. Wings of males of the former measure 98–109, of females 92–101 mm.

Markus (1966) has commented in some detail on the seven specimens which he collected. He also tells me (pers. comm. to J.M.H., 8.8.69) that specimen 1, the subject of the present note, had the left wing 101.5 mm., the right wing 104.5 mm. (measurements to nearest 0.5 mm.).

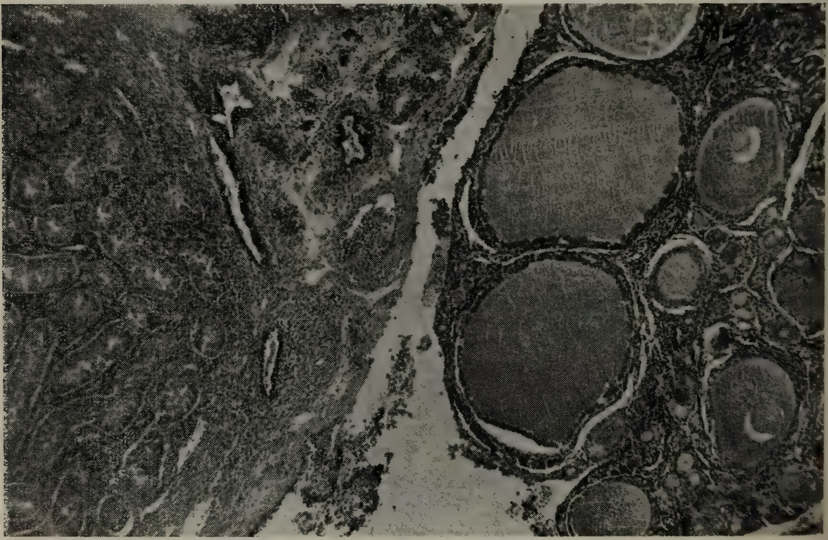


Fig. 1, photomicrograph of gonad block showing ovary and testis in the same field, ×75, H. & E.

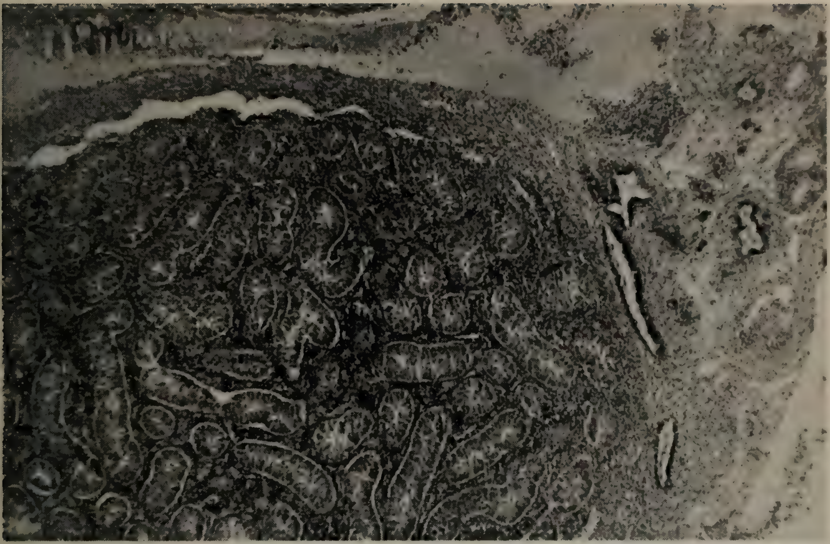


Fig. 2, photomicrograph of gonad block showing testis and epididymis, × 75, H. & E.

Histopathology: The specimen received consisted of the gonad-adrenal block of tissue embedded in paraffin wax. It is the practice of the authors in cases of suspected gonad abnormality to take a series or step sections right through this block to ensure that all tissues are visualised. This technique (G.W.S.) has the advantage of ensuring that all parts of the gonads, adrenals, and kidneys can usually be studied in detail and is of particular importance when there is some doubt as to whether the organs are single or paired. In the present case there is a certain amount of post mortem autolysis, but this did not obscure the basic histology.

The adrenal glands are present on both sides and are quite normal. On the right side there is a clearly defined testis showing apparently normal tubules with spermatogenic cell layers, which although showing some mitotic activity do not appear to be producing mature sperms. It has been observed that in quite normal gonads, activity varies with the breeding season, and varies from a state of potency down to almost atrophic inactivity. The relative state to the breeding season in this particular specimen is not known.

On the left side there is a clearly defined ovary with an apparently normal impression of follicular development. We have thus opposing gonad types in the same bird on opposite sides and these correspond with the physical characteristic as described by Markus in his letter to the authors.

SUMMARY

The gonads of a gynandromorphic bulbul, *Pycnonotus barbatus superior* Clancey are described. Routine systematic study showed that the left wing was some 3 mm. shorter than the right, size being the only demonstrable difference between the sexes in this species.

This gynandromorphic finding was confirmed histologically, the left gonad being an ovary, and the right gonad a testis.

ACKNOWLEDGMENTS

The authors are indebted to Dr. M. B. Markus, of Pretoria University, for sending them the gonad block of this specimen for study, and for asking them to publish the case.

We are also grateful to Mr. R. Waites, F.I.M.L.T., for the sections, and for the photomicrograph.

References:
Clancey, P. A. 1964. *The Birds of Natal and Zululand*, 323.
Markus, M. B. 1966. Systematic Notes on *Pycnonotus* from the south-western Transvaal. *Ostrich* 37, (4), 234.

Some new distributional records for Kenya

by P. L. Britton and J. F. Harper

Received 23rd June, 1969

Little has been written on the birds of the Nyanza Province of western Kenya, and in the course of a routine study of the birds of this area we have recorded several species hitherto unknown from Kenya. Some of these represent considerable extensions of known range, but others are known from ecologically similar areas of eastern Uganda, and it is likely that other species will be similarly recorded in the future. It is hoped that this will be the first of several papers listing our most interesting records, later to be incorporated in a check list of the birds of Nyanza.

Nomenclature follows White (1960, 1963, 1965). The following localities are mentioned: Lake Kanyaboli, 0° 3′ N., 34° 10′ E.; Kisumu, 0° 5′ S., 34° 45′ E.; Maranda, 0° 6′ S., 34° 14′ E.; Mulaha, 0° 3′ N., 34° 15′ E.; Ng'iya, 0° 3′ N., 34° 22′ E.; Rusinga Island, 0° 24′ S., 34° 10′ E.; Ukwala, 0° 11′ N., 34° 12′ E.; Usengi, 0° 4′ S., 34° 2′ E.; Waturi Point, 0° 27′ S., 34° 2′ E. All uncredited specimens are ours, and apart from two *Bradypterus graueri* and one *Chloropeta gracilirostris* which are in the British Museum (Natural History), they are all lodged in the National Museum, Nairobi.

Merops variegatus loringi (Mearns)

Seen on several dates at the edge of papyrus at Usengi, where two were ringed and released on 27th October, 1968. White (1965) did not record it east of Uganda, but Williams (1963) extended its range to extreme western Kenya; however, he omits it for Kenya in Williams (1967).

Britton (1968) omitted to mention the sympatry of this species and *M. pusillus meridionalis* (Sharpe) in Uganda, and they are also sympatric in extreme western Kenya. Weights and wing lengths of the two birds handled usefully augment the meagre data (all *M. v. bangweolensis* [Grant]) for this species in Britton (*op. cit.*): 23.5, 21.0g; 90, 88 mm.

Pogoniulus chrysoconus chrysoconus (Temminck)

Ad. ♀, 27th May, 1962, Kisumu (collected I. Bampton).
Ad. ♂, 24th May, 1969, Maranda.

Recorded by Jackson (1938) west of Kisumu, but omitted by Mackworth-Praed and Grant (1955) and White (1965). Bampton's record confirms its presence in Kenya and we have trapped it at Ng'iya (7th November, 1968) and Maranda (10th, 21st and 24th May, 1969).

Jynx torquilla subsp.

A bird first seen at Ng'iya on 19th February, 1969, was ringed and released there on 22nd February. It was an adult with wing 86 mm., weight

40 g. A palaearctic migrant previously recorded south to Somalia and Uganda (White, 1965).

Bradypterus graueri carpalis Chapin

Ad. ♀, 17th April, 1969, Waturi Point; ♂, in breeding condition, 25th May, 1969, Lake Kanyaboli; 2 ♀♀, 2nd June, 1969, Lake Kanyaboli; pair with one dependent young, 7th June, 1969, Ukwala.

The above specimens from papyrus swamp represent an extension of known range from western and southern Uganda (Mackworth-Praed and Grant, 1955).

Five of the specimens have ten rectrices, as given for *B. carpalis* and *B. graueri grandis* Ogilvie-Grant in Chapin (1953), but the number of rectrices in the remaining two specimens cannot be determined because of heavy moult. Chapin (*op. cit.*) states that *B. g. graueri* Neumann has twelve rectrices. Measurements (mm.) of the above specimens are:

Sex	*Wing*	*Tail*	*Culmen (to base)*
♂	70	73	18
♂	72	76	18.5
♀	69	66	18.5
♀	69	72	17
♀	66	68	18
♀	67	74	17.5
○	68	70	17

Chloropeta gracilirostris gracilirostris Ogilvie-Grant

♂, 2nd June, 1969, Lake Kanyaboli; ♀, had recently laid, 8th June, 1969, Lake Kanyaboli.

The above specimens from the interior of papyrus swamp represent a considerable extension of known range from the Congo–Uganda border (White, 1960). C. W. Benson and Mrs. B. P. Hall have compared them with the type of *C. g. gracilirostris* in the British Museum (Natural History) and they agree perfectly. Measurements (mm.) are:

Locality	*Sex*	*Wing*	*Tail*
Type	♂	62	63
Lake Kanyaboli	♂	62	63
Lake Kanyaboli	♀	59	60

Keith and Vernon (1966) gave full measurements for all three members of the genus *Chloropeta* Smith, using material in the American Museum of Natural History.

Ploceus castanops Shelley

♂, 13th April, 1932, Rusinga Island (anon.); ♀, 14th April, 1932, Rusinga Island (anon.); ♂, 22nd February, 1969, Usengi; pair, 25th May, 1969, Lake Kanyaboli; ♀, 2nd June, 1969, Lake Kanyaboli; ♂, 8th June, 1969, Lake Kanyaboli.

Mackworth-Praed and Grant (1955) and White (1963) do not record it east of Uganda, although the early Rusinga Island specimens exist in the National Museum, Nairobi. Williams (1967) extends the range to western Kenya, along the shore of Lake Victoria, but otherwise it appears not to be documented.

Euplectes gierowii ansorgei (Hartert)

A breeding pair, 15th May, 1969, Ng'iya; ad. ♂, 25th May, 1969, Maranda.

A male and female of this distinctive form were first recorded at Maranda on 29th March, 1969. Excluding the above specimens, we have since examined a total of nine males and seven females in the hand at Maranda, Mulaha and Ng'iya on several dates. This is the form found in eastern Uganda. Otherwise the species is only known in Kenya from Lake Natron to east of Lake Victoria, where the form is *E. g. friederichseni* (Fischer and Reichenow) (White, 1963). Although our localities are less than *c.* 150 km. (*c.* 100 miles) from the edge of the known range of *E. g. friederichseni* there is no evidence of intergradation in our specimens.

Clytospiza monteiri (Hartlaub)

♀, had recently laid, 4th June, 1969, Ng'iya; ad. ♂, 7th June, 1969, Ukwala.

Both of the above specimens were from thick cover by water; at the edge of *Typha* at Ng'iya and the edge of papyrus at Ukwala. However, a female netted at Ng'iya on 26th March, 1969, and two males and a female netted at Mulaha on 6th April, 1969, were in scattered *Lantana camara* thickets away from water. The species occurs in high grass savanna near forest east to Uganda (White, 1963).

Estrilda troglodytes troglodytes (Lichtenstein)

♀, 15th March, 1969, Maranda; ♂, 4th May, 1969, Mulaha; ♀, holding yolking eggs, 28th May, 1969, Ng'iya.

In addition to the above specimens, we have sight records from all three localities; in cultivated land at Maranda, but on the edge of *Typha* at Mulaha and Ng'iya. A considerable extension of known range from north-western Uganda (White, 1963).

Mrs. B. P. Hall has pointed out that this is a dry country species and that this extension to western Kenya is most unexpected. With continued observation we may learn whether its occurrence in western Kenya is normal or accidental. The latter is possible, since the Maranda specimen was found dead by the wall of a house, as happens frequently with some well-known African migrants.

Lagonosticta rufopicta rufopicta (Fraser)

♂, 11th February, 1969, Mulaha; ♀, holding yolking eggs, 15th May, 1969, Ng'iya; ♂, 22nd May, 1969, Mulaha; ♀, ovary large, and ♂, 4th June, 1969, Ng'iya.

In addition to the above specimens, five have been ringed at Mulaha, two at Lake Kanyaboli and two at Ukwala. The Lake Kanyaboli and Ukwala birds were on the edge of papyrus, but all others were in scattered *Lantana camara* thickets and *Typha* by water. Although it is clearly locally numerous by water, *L. senegala ruberrima* Reichenow is far more widespread, occurring alongside *L. r. rufopicta*, but also far from water. Ng'iya has produced these two species and a pair of *L. rubricata hildebranti* Neumann (our only record) from one set of nets on the edge of *Typha*.

White (1963) does not record it nearer than north-western Uganda, but Nicolai (1968) gives a sight record from near Tororo (Uganda) on 23rd August, 1967.

ACKNOWLEDGMENTS

We would like to thank C. W. Benson and Mrs. B. P. Hall for comparing the *Chloropeta g. gracilirostris* specimens with the type in the British Museum (Natural History), and for useful criticism of the original manuscript; A. D. Forbes-Watson, Ornithologist, National Museum, Nairobi, for his assistance and the loan of a skinner, Loriu Lokiru; and Dr. Robert B. Payne for drawing our attention to the recent paper by Nicolai.

References:
Britton, P. L. 1968. Two African species pairs. *Bull. Brit. Orn. Cl.*, 88: 163–166.
Chapin, James P. 1953. The Birds of the Belgian Congo, Part 3. *Bull. Am. Mus. Nat. Hist.*, 75A.
Jackson, F. J. 1938. *The Birds of Kenya Colony and Uganda Protectorate*. Gurney and Jackson, London.
Keith, Stuart and Vernon, Carl. 1966. Notes on African Warblers of the genus *Chloropeta* Smith. *Bull. Brit. Orn. Cl.*, 86 : 115–120.
Mackworth-Praed, C. W. and Grant, C. H. B. 1952, Vol. I; 1955, Vol. II. *Birds of Eastern and North-eastern Africa*. Longmans, Green & Co., London.
Nicolai, J. 1968. *Lagonosticta rufopicta* in Sudöst Uganda. *J. Orn.* 109 : 131–132.
White, C. M. N. 1960. A check list of the Ethiopian Sylviinae. Part 1. *Occ. Pap. Nat. Mus. S. Rhod.*, 24B : 399–430.
— 1963. *A revised check list of African flycatchers, tits, tree creepers, sunbirds, white-eyes, honey-eaters, buntings, finches, weavers and waxbills*. Government Printer, Lusaka.
— 1965. *A revised check list of African non-passerine birds*. Government Printer, Lusaka.
Williams, J. G. 1963. *A Field Guide to the Birds of East and Central Africa*. Collins, London.
— 1967. *A Field Guide to the National Parks of East Africa*. Collins, London.

New bird host records for *Icosta minor* (Bigot) (Diptera: Hippoboscidae) from Rhodesia

by R. P. Borrett

Received 15*th September*, 1969

On 14.4.68 a hippoboscid fly was caught on a Richard's Pipit *Anthus novaeseelandiae*, collected near Salisbury in connection with my current life-history studies of the African pipits; on 5.1.69 another such fly was taken from a Great Reed Warbler, *Acrocephalus arundinaceus*, netted during ringing operations at my home in Salisbury. Richard's Pipit is a common resident species in Mashonaland, whilst the Great Reed Warbler is a not uncommon summer visitor from October to March.

The two flies were forwarded to Dr. F. Zumpt, Department of Entomology, South African Institute for Medical Research, Johannesburg, who identified both specimens as *Icosta* (*Ornithoponus*) *minor* (Bigot, 1858).

This fly has long been known as *Lynchia minor*, but recently Maa (1969) re-arranged its systematic position. Maa (1964, p. 89) records it (as *Lynchia minor*) from *Anthus* sp. from the Congo; the record from *A. novaeseelandiae* provides further evidence that pipits may be among its hosts. There are no previous records of it from the genus *Acrocephalus*, though a close relative, *Icosta* (*Ornithoponus*) *sensilis* Maa, has been recorded from A. *arundinaceus* in south-east Asia (Maa, 1969).

Maa (1969) gives the distribution of *I. minor* as "Entire Ethiopian Region and Mediterranean Basin . . . Obviously breeding on Passeriformes, with stray records from Cuculi- and Coraciiformes". Maa (1964, 1969) and Zumpt (1966) provide lists of various hosts, mostly passerine, but some non-passerine, from which *I. minor* has been recorded. It will undoubtedly be encountered on many more species in the future.

I am grateful to Dr. Zumpt for identifying this fly, and also to Mr. J. A. Ledger, Entomology Department, S.A.I.M.R., for providing references to the entomological literature.

References:
Maa, T. C. 1964. On the genus *Lynchia* from Africa. *J. med. Ent.* 1 : pp. 87–103.
— 1969. Studies in Hippoboscidae (Diptera), Part 2. *Pacif. Ins. Monogr.* 20, 312 pp.
Zumpt, F. (ed) 1966. The Arthropod parasites . . . *Publs. S. Afr. Inst. med. Res.* 13 (52), 283 pp.

A Streaked Flycatcher at sea

by F. Haverschmidt

Received 14th September, 1969

On 15th April, 1968, I was aboard the *m.v. Oranje Nassau* sailing from Paramaribo, Surinam, to Port of Spain, Trinidad, which was reached in the early morning of the next day. At about 10.30–noon position of the ship 8° 16′ N. and 57° 29′ W., about 150 miles from the Guyana coast, I noticed a bird flying near the ship trying to alight. Shortly afterwards it flew against a window of one of the inner decks, but escaped through an open window when I tried to catch it.

It was a Streaked Flycatcher (*Myiodynastes maculatus*) and of the race *solitarius* because of its dark upperparts and blackish streaks on its underparts. This race inhabits southern South America and is a well-known migrant in the northern part of this continent. My earliest date for Surinam is 22nd April (Haverschmidt, *Birds of Surinam*, 1968: 307), while Snyder (*The Birds of Guyana*, 1966, 207) states that it occurs in Guyana from March onwards, as do Phelps and Phelps (Lista de las Aves de Venezuela con su distribucion Pt. II. *Bol. Soc. Ven. Cienc. Nat.* 24, 1963: 180) from Venezuela. Meyer de Schauensee (The Birds of the Republic of Colombia. *Caldasia* V, Pt. III, 1950: 819) reports its occurrence in Colombia on 14th May and between 8th and 18th May. It is not (yet) known from Trinidad (Junge and Mees, The Avifauna of Trinidad and Tobago. *Zool. Verh.* 37, 1958: 103, and Herklots, *The Birds of Trinidad and Tobago*, 1961: 196), but in the present case it could have reached the island by assisted passage on a ship.

The tropical African population of *Apus affinis*

by R. K. Brooke

Received 9th October, 1969

The main tropical African population of *Apus affinis* (Gray) has been referred by authors either to *A. a. abessynicus* (Streubel) or to the nominate race of India. Bannerman (1932) explained the differences between nominate *affinis* and *abessynicus*. C. W. Benson has examined the series in the British Museum of Natural History in London and advises (*in litt.*) that Bannerman's (*op. cit.*) comments are largely justified. I found the same when studying the long series in the Field Museum of Natural History in Chicago. In addition, African birds range from 21 to 28 g, whereas Indian birds range from 15 to 21.5 g (Naik & Naik, 1966). There is no doubt that African and Indian birds are separable, that there is no present intercommunication between the continents and that different subspecific names should be applied.

However, the name *abessynicus* of Streubel is not available. The type locality as restricted is Massawa on the Eritrean coast of Ethiopia (Peters, 1940). All specimens examined by myself and C. W. Benson at my request from the Eritrean and northern Somali coasts are clearly the pallid *galilejensis* (Antinori, 1855). Professor E. Stresemann has kindly advised (*in litt.*) that "the type specimen of *A. a. abessynicus* (Streubel, 1848) has been collected in Massawa or on the opposite coast (Arkibo or Silat) in May or June, 1825, by Wilhelm Hemprich, the companion of Ehrenberg. Judging by the season it belongs certainly to the population breeding in Ethiopia. It was exposed to daylight for at least 60 to 70 years and its plumage may have faded somewhat during this time". The name *abessynicus* Streubel 1848 is therefore an earlier name for *galilejensis* (Antinori, 1855). Rather than confuse the literature by transferring the name *abessynicus* to what has long been called *galilejensis* the International Commission for Zoological Nomenclature is being approached to suppress the name *abessynicus* in the combination *Cypselus abessynicus* Streubel 1848, thus preserving *galilejensis* in its traditional sense and usage.

In the meantime the tropical African population has no name but requires one. I therefore propose—*Apus affinis aerobates* nom. nov. pro *A. a. abessynicus* auctorum non Streubel.

Type: American Museum of Natural History no. 296816; adult male; Mbandaka (olim Coquilhatville), Equateur, Congo Kinshasa; 11th March, 1931; collector, J. P. Chapin; collector's no. 560.

Measurements of type: wing 135, culmen 7.5, tail 41, depth of tail fork 3 mm.

Description: differs from *galilejensis* (Antinori) and *theresae* Meinertzhagen, the races which abut it north and south, by being generally darker, particularly on the frons and by having a streaked throat in most adults. It is not as dark as *bannermani* Hartert. It differs from nominate *affinis* (Gray) in being slightly darker, somewhat larger and living in a different continent. *Aerobates* is a five-syllabled word derived from Greek and meaning travelling about in the air and is an allusion to Robert Graves's poem *Flying Crooked* about the Cabbage White Butterfly which ends "even the aerobatic swift has not his crooked flying gift".

A. a. aerobates is widespread in the savanas and forest clearings of Africa from Senegal to central Ethiopia and southern Somalia south to Angola, central Rhodesia and Natal. Details of its range and measurements will be included in a review of geographical range and variation which I am preparing.

There is topotypical material of this form in the Museum of Zoology of Princeton University and in the Koninklijk Museum voor Midden-Afrika in Tervuren.

The work on which this communication is based was undertaken while holding a Frank M. Chapman memorial grant from the American Museum of Natural History. I am obliged to Dr. Dean Amadon in New York, to Dr. Emmett R. Blake in Chicago, to Mr. Charles H. Rogers in Princeton and to Dr. H. Schouteden in Tervuren for facilities for study and to Mr. C. W. Benson and to Professor E. Stresemann for examining material in London and Berlin respectively on my behalf.

References:

Bannerman, D. A. 1932. Note on the African race of Micropus affinis. *Ibis* 13 : II : 4 : 686–687.

Naik, S. & Naik, R. M. 1966. Studies on the House Swift, Apus affinis (G. E. Gray) (sic) 6. body weight. *Pavo* 4 : 1 & 2 : 84–91.

Peters, J. L. 1940. *Check-list of the birds of the world IV*. Harvard University Press, Cambridge, Mass.

Hemiprocne coronata is a good species

by R. K. Brooke

Received 25th August, 1969

The treeswifts of India, south-east Asia and the western Pacific islands form the distinctive family Hemiprocnidae (Lowe, 1939). They are brightly coloured and feed by hawking insects from high perches. It was Peters (1940) who first placed *Hemiprocne coronata* (Tickell) as a race of *longipennis* (Rafinesque), remarking that it "is a well-marked representative form of *longipennis*, not a distinct species". Nonetheless, *coronata* differs markedly from *longipennis* in a number of characters and shows an approach to those found in *H. mystacea* (Lesson) in some of these differences. It therefore appears that *coronata* should be treated as a full species. In the first place, *coronata* differs from the other members of the genus in the much greater extent of chestnut on the heads of males; it is not confined to the side of the head as in the other species but extends down the side of the face and across under the chin. It also differs even in juvenal plumage from the other species in having no white on the inner webs of the inner primaries. It resembles *mystacea* in the greatly elongated fifth or outer rectrix, whereas this feather is not much longer than the fourth rectrix in *longipennis* and *comata* (Temminck) (see Table 1), and also in the grey, not green, colour of the mantle and back. The female of *coronata* has an unelongated white chin stripe which adumbrates the highly developed chin stripes of *mystacea* and *comata*, but which does not occur at all in *longipennis*. These differences are at least as great as those distinguishing sympatric species of swifts in south-east Asia and elsewhere. None of the foregoing points are weakened by the fact that *coronata* is allopatric to the rest of the genus, and so it seems the best course to treat *coronata* as a monotypic species of *Hemiprocne*.

TABLE 1

Species	*Delta length*
H. coronata	50 ± 5 mm.
H. longipennis	25 ± 5 mm.
H. mystacea	60 ± 10 mm.
H. comata	12.5 ± 3.5 mm.

Distance between tip of fourth and fifth rectrix in *Hemiprocne*, called delta length by Prigogine (1960).

The English names of *Hemiprocne* are more confused than is usual even in a tropical genus; most names used are descriptive of the group, not the species, and the same names are applied to different species by different writers. I fully support Parkes (1960) in his view that the best group name is treeswift, so descriptive of their habits and habitat vis-à-vis other swifts. Few existing names are satisfactory and I therefore propose the following names, which should assist the field identification of the species:

H. coronata, Crested Treeswift; *H. longipennis*, Grey-rumped Treeswift; *H. mystacea*, Greater Treeswift; *H. comata*, Lesser Treeswift.

I am obliged to Dr. Charles T. Collins for criticising the draft of this contribution. We discussed the English names with Mr. Ben King, of Yale University. The work on which this contribution is based was undertaken while holding a Frank M. Chapman memorial grant from the American Museum of Natural History in New York.

References:

Lowe, P. R. 1939. On the systematic position of the swifts (suborder Cypseli) and the humming-birds (suborder Trochili) with special reference to the order Passeriformes. *Trans. Zool. Soc. London* XXIV : IV : 307–348.

Parkes, K. C. 1960. Geographic variation in the Lesser Tree-Swift. *Condor* 62 : 1 : 3–6.

Peters, J. L. 1940. *Check-list of the birds of the world* IV. Harvard University Press, Cambridge, Mass.

Prigogine, A. 1960. Un nouveau martinet du Congo. *Rev. Zool. Bot. Afr.* LXII : 1–2 : 103–105.

Some records of albinism in East Africa

by P. L. Britton

Received 13*th August*, 1969

In the course of field work and museum studies in Kenya during the last twelve months, I have obtained nine records of albinism, involving eight species.

The four specimens in the collection of the National Museum, Nairobi, are the only obvious albinistic examples of *c.* 25,000 specimens therein. Although I have seen every specimen in that collection I have made no attempt to examine them for minor signs of albinism, but it is unlikely that specimens exhibiting widespread albinism have been overlooked. It is surprising that there are so few albinistic specimens (*c.* 0.02%), especially as one would expect collectors' interest in aberrant specimens to artificially increase this figure. There are very likely many further specimens exhibiting slight albinism.

The four records involving birds which I have netted are the only examples of albinism in *c.* 3,000 birds handled. As all birds were examined for active moult it is unlikely that aberrant plumage was overlooked, even if it involved only one or two feathers. Only *c.* 0.13% showed signs of albinism but the figure is *c.* 0.8% for *Pycnonotus barbatus*.

Numenius arquata (L.)

A bird was watched on the open shore of Lake Nakuru on 27th June, 1969. It was a very pale, isabelline variety, and probably female, as the bill appeared exceptionally long. It was very similar to the bird photographed by Dr. Pamela Harrison, described in Harrison (1969). Lake Nakuru is one of the Rift Valley soda lakes, but I am certain that the condition described above was not due to "bleaching", as I have seen nothing approaching this condition in any of the birds (including hundreds of waders) which I have handled at this locality.

Laniarius funebris (Hartlaub)

An otherwise normal bird handled at Kongelai, West Pokot, on 28th October, 1968, had the third secondary on the left wing white apart from the shaft and tip.

Dicrurus a. adsimilis (Bechstein)

A wholly white specimen in the National Museum was collected by D. K. S. Grant in the West Usambara Mountains, Tanzania, on 11th March, 1955. The label gives the iris as red, but other soft part colours are not given. The specimen has a yellowish bill, horn coloured legs and feet and yellowish nails. Although these colours may have changed since the time of collection, they are certainly not normal, being unusually pale compared with other specimens.

Pycnonotus barbatus tricolor (Hartlaub)

A bird handled at Ng'iya, Nyanza, on 22nd November, 1968, had the second tertial on the right wing white, and a bird handled at Lake Kanyaboli, Nyanza, on 19th July, 1969, had the inside feather on the right side of the tail white, a few white feathers on the crown and a white tip to one tertial covert on the right wing. Both birds were otherwise normal.

Myrmecocichla aethiops cryptoleuca Sharpe

A male in the National Museum was collected for A. D. Forbes-Watson at Lugari (near Kitale) on 10th July, 1962. It has no soft part colours recorded on the label, but the bill, legs and feet are apparently normal (blackish). Normal *M. aethiops* are dark brown throughout except for white on the primaries and some white speckling on the forehead, throat and upper breast. It is mainly very dark brown, being darker than any of the thirty-seven normal specimens in the National Museum, and closer in colour to the five female *M. a. arnoti* (Tristram) in the collection. The forehead to upper mantle, whole of the head, and chin to upper breast is mainly pure white with some dark brown feathers. There are some white feathers throughout, but the albinism is more or less symmetrical.

Turdoides h. hypoleucus (Cabanis)

A largely off-white female in the National Museum was collected in the Chyulu Hills on 24th April, 1938. The label gives pale yellow iris, black bill and grey-horn feet. The underparts and tail are off-white except for the outer tail feather on the right, which is brown with a very small area of white at the tip, and localised dusky brown smudges on several tail feathers. The upperparts are largely off-white, but there are some brown feathers on the forehead, nape and mantle, and the lores and malar region are brownish. The wings are white except for the third primary, the outer web and a little of the inner web of the second primary, the first primary (apart from the tip) and the first secondary (apart from the tip), which are brown on the right wing, and the fourth, second and first primaries, and the first secondary, which are brown on the left wing. Primaries are numbered from the inside, and secondaries and tertials are numbered from the outside.

Acrocephalus gracilirostris jacksoni (Neumann)

I collected a male in breeding condition at Ukwala, Nyanza, on 7th June, 1969. It is normal except for primary 4 and primaries 6–10 on the left wing, which are pure white.

Camaroptera brachyura griseigula Sharpe

A male (B 1283) collected by Oliver at Kitale on 18th June, 1929, is in the collection of Capt. H. F. Stoneham, now in the National Museum. The label gives the eye colour as "black with a yellow ring", so the iris was presumably yellow; the legs and feet were flesh and the bill white. It is pure white where the normal bird is grey or greyish, and the only pigment is canary yellow on the wings and legs. These areas of yellow are green (wings) or rich buff (legs) in normal birds.

ACKNOWLEDGMENTS

I would like to thank A. D. Forbes-Watson, Ornithologist, National Museum, Nairobi, for allowing me access to their collection and for drawing my attention to the *Myrmecocichla*, *Turdoides* and *Camaroptera* specimens.

Reference:
Harrison, Jeffery. 1969. Isabelline Curlews and Turnstone in Eire. *Bull. Brit. Orn. Cl.* 89 : 74–76.

Bulletin of Zoological Nomenclature: Opinion 882

In accordance with a decision of the Committee of the Club, and by permission of the International Trust for Zoological Nomenclature, the following Opinion is reproduced from the *Bulletin of Zoological Nomenclature*, vol. 26, part 1, dated 12th May, 1969. This is the only such Opinion concerning birds so far published since 1st January, 1969. Subject to the permission of the Trust, it is proposed to reproduce further Opinions, or publish summaries thereof, in so far as they affect birds.

OPINION 882

ORNITHOLOGIA BRITANNICA, 1771: VALIDATION OF FOUR SPECIFIC NAMES OF BIRDS

RULING.—(1) Under the plenary powers the following specific names, which were published in the work *Ornithologia britannica* in 1771 no doubt by M. Tunstall, a work which has been rejected by the Commission in Direction 38 for all nomenclatorial purposes, are hereby validated;

(a) *peregrinus* [Tunstall], 1771, as published in the combination *Falco Peregrinus*,

(b) *aesalon* [Tunstall], 1771, as published in the combination *Falco Æsalon*,

(c) *rubescens* [Tunstall], 1771, as published in the combination *Alauda Rubescens*,

(d) *cinerea* [Tunstall], 1771, as published in the combination *Motacilla cinerea*.

(2) The following specific names, validated under (1) above, are hereby placed on the Official List of Specific Names in Zoology, with the Name Numbers specified:

(a) *peregrinus* [Tunstall], 1771, as published in the combination *Falco Peregrinus* (Name No. 2299);

(b) *aesalon* [Tunstall], 1771, as published in the combination *Falco Æsalon* (Name No. 2300).

(c) *rubescens* [Tunstall], 1771, as published in the combination *Alauda Rubescens* (Name No. 2301);

(d) *cinerea* [Tunstall], 1771, as published in the combination *Motacilla cinerea* (Name No. 2302).

HISTORY OF THE CASE (Z.N.(S.) 1636)

The present application was submitted to the office of the Commission by the Standing Committee on Ornithological Nomenclature of the International Ornithological Congress, Chairman Finn Salomonsen, in March 1958. The application was sent to the printer on 8 May 1964 and was published on 26 November 1964 in *Bull. zool. Nomencl.* **21**: 366–367. Public Notice of the possible use of the plenary powers in the present case was given in the same part of the *Bulletin* as well as to the other prescribed serial publications (Constitution Art. 12b; *Bull. zool. Nomencl.* **21**: 184) and to twelve ornithological serials. The proposals were supported by the Committee of Nederlandse Ornithologisch Unie and the Commissie voor de Nederlandse Avifauna.

DECISION OF THE COMMISSION

On 15 August 1966 the Members of the Commission were invited to vote under the Three-Month Rule on Voting Paper (66)41 either for or against the proposals set out in *Bull. zool. Nomencl.* **21**: 366–367. At the close of the prescribed voting period on 15 November 1966 the state of the voting was as follows:

Affirmative votes—twenty-two (22), received in the following order: China, Vokes, Obruchev, Simpson, do Amaral, Mayr, Bonnet, Tortonese, Stoll, Uchida, Jaczewski, Kraus, Evans, Lemche, Mertens, Sabrosky, Binder, Brinck, Forest, Ride, Alvarado, Holthuis.

Negative votes—none (0).

Voting Papers not returned—three (3): Boschma, Hubbs, Munroe.

Original References

The following are the original references for names placed on the Official List by the Ruling given in the present Opinion.

peregrinus, *Falco*, [Tunstall], 1771, *Ornithologia britannica*: 1
œsalon, *Falco*, [Tunstall], 1771, *Ornithologia britannica*: 1
rubescens, *Alauda*, [Tunstall], 1771, *Ornithologia britannica*: 2
cinerea, *Moyacilla*, [Tunstall], 1771, *Ornithologia britannica*: 2.

CERTIFICATE

We certify that the votes cast on Voting Paper (66)41 were cast as set out above, that the proposal contained in that Voting Paper has been duly adopted under the plenary powers, and that the decision so taken, being the decision of the International Commission, is truly recorded in the present Opinion No. 882.

R. V. MELVILLE
Secretary

W. E. CHINA
Assistant Secretary

International Commission on Zoological Nomenclature

London
26 *February* 1969

23 DEC
ZOOLOGY

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, C. W. Benson, c/o University Museum, Department of Zoology, Downing Street, Cambridge. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Contributions should be submitted to the Editor in duplicate and should be addressed to C. W. Benson, personally.

Authors introducing a new name or describing a new series or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s*. for years up to 1968 (Vol. 88) and 7*s*. 6*d*. for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 5*s*., payable to the Hon. Treasurer, P. Tate. 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

BULLETIN

of the

BRITISH ORNITHOLOGISTS' CLUB

17 AUG 1971

EDITED BY

C. W. BENSON

Volume 90

1970

PRICE: THREE POUNDS (PER VOLUME)

PREFACE

The arrangement and lay-out of volume 89 has continued unchanged. Once again thanks are due to Dr. P. J. K. and Mrs. J. M. Burton for most kindly compiling the List of Authors and Index to Scientific Names; to those who have contributed to the enjoyment of the Club's meetings; to those who have supported the *Bulletin* by their papers; and to those who have advised the Editor on individual papers, particularly Dr. W. R. P. Bourne, Dr. H. Friedmann, Mr. I. C. J. Galbraith, Mr. D. Goodwin, Mrs. B. P. Hall, Dr. R. B. Payne, Capt. C. R. S. Pitman and Mr. K. D. Smith. Again, thanks are also due to Mr. K. E. Wiltsher, Manager of the Caxton and Holmesdale Press, for his co-operation in the regular production of the *Bulletin*.

Due to rises in printing costs (affecting the printing trade as a whole), it has been decided to dispense in this Volume with lists of past and present officers of the Club.

C. W. BENSON

LIST OF MEMBERS AS AT 31st DECEMBER, 1970

Amended as follows:

New Members

Bailey, K., B.Sc., Dept. of Psychology, University of Stirling, Scotland.
Bloomfield, P. J., 96 Radcliffe Road, Bolton, Lancs.
Brighten, R., 17 Victoria Road, Chingford, London, E.4.
Bruce, M. D., 8 Spurwood Road, Turramurra, N.S.W., 2074 Australia.
Burton, J. A., 46 Mount Road, London, S.W.18
Carty, D. P., 128 Westmorland Road, Coventry CV2 5BT
Clark, G. S., 24 Adair Street, Scullin, A.C.T., Australia.
Fairhurst, A. R., Coalgate House, Hall Lane, Wrightlington, Wigan, Lancs.
Goodall, A. E., 54 Adrian Road, Abbotts Langley, Watford, Herts. WD5 OAQ
Holloway, L. G., Grimsel, Barrack Lane, Aldwick, Bognor Regis, Sussex.
Hopkins, J. R., 25 Keynsham Road, Cheltenham, Glos.
Horne, Mrs. J. F. M., P.O. Box 21247, Nairobi, Kenya.
Hudson, Robert, c/o B.T.O., Beech Grove, Tring, Herts.
Jansson, L. T., Nynasvagen 506, S-142 00, Trangsund, Sweden.
Johnson, E. D. H., Crabiere Cottage, Route des Meilles, St. Ouen, Jersey, C.I.
Lyons, Clifford R., 6424 Mt. Adelbert Drive, San Diego, California 92111, U.S.A.
McKelvie, J. M., Birchdene, Bracken Lane, Storrington, Sussex.
Merry, Brian, Harley Farm, Heddington, Calne, Wilts.
Olson, S. L., Dept. of Pathobiology, School of Hygiene & Public Health, John Hopkins University, 615 N. Wolfe Street, Baltimore, Maryland 21205, U.S.A.
Oversby, C. J., 5 Hodge House, Windermere, Westmorland.
Parkes, Dr. Kenneth C., Carnegie Museum, Pittsburgh, Penn. 15213, U.S.A.
Payne, M. R., Field Barn, Boughton, Kings Lynn, Norfolk.
Rowland, E. G., 128 Westgate, Guisborough, Yorks.
Sanderson Dolley, F. H., Dolley's Hill Nurseries, Normandy, Guildford, Surrey.
Took, J. M. E., c/o The British Council, P.O. Box 1995, Nicosia, Cyprus.
Young, K. B., 12 Clifford Gardens, Shirehampton, Bristol BS1 10EE

Rejoined

Smith, K. D., Broad Oaks, Purn Lane, Bleadon Hill, Weston-super-Mare, Somerset.

Resignations

Dr. W. R. P. Bourne
C. J. Bridgman
W. F. A. Buck
G. B. Cuthbertson
Dr. F. de Hamel
P. Edwards
F. Fincher
R. G. Finnis
I. C. J. Galbraith
E. H. Gillham
Mrs. A. Hughes
F. J. Hulbert
Capt. J. N. Humphrey
Major P. B. Lowe
Dr. I. D. Pennie
Mrs. C. R. P. Phillips
R. H. Ridgway
Dr. W. H. Thorpe
F. I. Whitehouse
Col. O. Wynne

Removed from Membership

N. Gardiner
A. R. Gregory
M. E. Griffiths
N. S. Malcolm
P. D. Sell

Deaths

The Committee regrets to record the death of the following members:—

Mr. Bashir E. Allouse
Sir Charles F. Belcher
Major A. Buxton (Life Member)
Mr. J. P. S. Clarke (Life Member)
Mr. Edwin Cohen
Mr. James M. M. Fisher
Mr. R. E. Moreau
Dr. N. F. Ticehurst (Life Member)
Major C. Worrin

LIST OF AUTHORS

(Compiled by Dr. P. J. K. and Mrs. J. M. Burton)

ANNUAL GENERAL MEETING 1
BEAMISH, H. H.
  A European Roller *Coracias garrulus* in the Seychelles 14–15
BECK, J. R.
  An illustrated talk on the birds of South Georgia and the South Orkneys 33
BENSON, C. W.
  A Blue-winged Pitta on Christmas Island, eastern Indian Ocean 24–25
  The systematic status of the form of *Streptopelia picturata* on Diego Garcia 32–34
  An illustrated talk on the birds of Aldabra 61
  The Cambridge collection from the Malagasy Region 168–172
  See also ROUX and STUART IRWIN
BORRETT, R. P. and JACKSON, H. D.
  The winter quarters of *Caprimulgus europaeus plumipes* Przhevalski .. 25–26
  The European Wheatear *Oenanthe oenanthe* (L.) in southern Africa 124–129
BOSWALL, JEFFERY
  The association of the Northern Carmine Bee-eater *Merops n. nubicus* with mammals, birds and motor vehicles in Ethiopia 92–96
  Age of acquiring adult plumage in *Gypaetus barbatus* 120
BOSWALL, JEFFERY and DEMMENT, MONTAGU
  The Daily Altitudinal Movement of the White-collared Pigeon *Columba albitorques* in the High Simien, Ethiopia 105–107
  See also KLUG
BRITTON, P. L.
  The immature plumage of two African warblers 26–28
  Two new shrikes for Kenya 133–134
  Some non-passerine birds weights from East Africa 142–144, 152–154
BROOKE, R. K.
  The buccal colours, weights and races of *Nectarinia bifasciata* 11–14
  Buccal colours in some sunbirds 134–135
  The White-headed Barbet in Angola 161–162
BROWN, L. H.
  Recent new breeding records for Kenya 2–6
BROWN, L. H. and URBAN, EMIL K.
  New and unusual records from south-west Ethiopia 82–83
  See also URBAN
BUCKLEY, P. A. and WURSTER, C. F.
  White-faced Storm Petrels *Pelagodroma marina* in the North Atlantic .. 35–38
BUER, C. E.
  See URBAN
BUNDY, G.
  Some notes on autumn migrants in Morocco 47–49
CLANCEY, P. A.
  On *Smithornis capensis suahelicus* Grote, 1926 164–166
COLSTON, P. R. and HOLYOAK, D. T.
  A specimen of *Locustella luscinioides* from western Arabia in the collection of the British Museum (Hat. Nist.) 47
COOPER, J. and Marshall, B. E.
  Observations on the nestlings of the Goliath Heron, *Ardea goliath*, in Rhodesia 148–152
COWLES, GRAHAM S.
  The original description by H. O. Forbes of the extinct New Zealand Musk Duck *Biziura delautori* 166–168
CRITCHLEY, R. A. and GRIMSDELL, J. J. R.
  Nesting of the Shoebill *Balaeniceps rex* Gould in the Bangweulu swamps .. 119
CUNNINGHAM-VAN SOMEREN, G. R.
  Animated perches and feeding associations of birds in the Sudan 120–122
  On *Prodotiscus insignis* (Cassin) parasitising *Zosterops abyssinica* Guérin .. 129–131

DEMMENT, MONTAGU
See BOSWALL
DOWSETT, R. J.
A collection of birds from the Nyika Plateau, Zambia 49–52
ERARD, C.
Short notes on the birds of Fezzan and Tripolitania 107–111
ERARD, C. and ETCHECOPAR, R. D.
Some notes on the birds of Angola 158–161
ERARD, C. and PREVOST, J.
New facts on the distribution of *Tauraco ruspolii* Salvadori 157
FORBES-WATSON, A. D.
A new species of *Melaenornis* (Muscicapinae) from Liberia 145–148
FRITH, C. B.
The nest and nestling of the Short-tailed Paradigalla *Paradigalla brevicauda* (Paradiseidae) 122–124
FROST, P. G. H. and SIEGFRIED, W. R.
Notes on the plumage of Buzzards from Socotra 136–142
GASTON, A. J.
Birds in central Sahara in winter 53–66
GILL, FRANK B.
The taxonomy of the Mascarene Olive White-eye, *Zosterops olivacea* 81–82
GRIMSDELL, J. J. R.
See CRITCHLEY
HALL, B. P.
A new record for Algeria 136
HARRISON, C. J. O.
The crop of the Chaffinch *Fringilla coelebs* 15–16
HARRISON, C. J. O. and HOLYOAK, D. T.
Apparently undescribed Parrot Eggs in the collection of the British Museum (Natural History) 42–46
HARRISON, C. J. O. and WALKER, C. A.
The extinct Musk Duck (*Biziura*) of New Zealand: a re-appraisal of *B. lautouri* 6–10
HARRISON, JAMES and HARRISON, JEFFERY
A note on three female Pochard x Tufted Duck hybrids 86–88
HAVERSCHMIDT, F.
The past and present status of the American Flamingo in the Guianas .. 74–77
HOLYOAK, DAVID T.
The relation of egg colour to laying sequence in the Carrion Crow .. 40–42
Comments on the classification of the Old World Ibises 67–73
The status of *Eos goodfellowi* 91
See also COLSTON and HARRISON, C. J. O.
HOPCROFT, JOHN
An illustrated talk on birds at Lake Nakuru and neighbouring lakes in Kenya 117
JACKSON, H. D.
Further recrods of *Caprimulgus europaeus plumipes* Przhevalski in south-eastern Africa 135
See also BORRETT
KLUG, SIGRUN and BOSWALL, JEFFERY
Observations from a water bird colony, Lake Tana, Ethiopia 97–105
MARSHALL, B. E.
See COOPER
MURTON, R. K.
Illustrated talk on Ornithology in Hong Kong 1
PARKES, KENNETH C.
The Philippine races of the Rufous-capped Grass Warbler *Megalurus timoriensis* 111–115
The races of the Rusty-breasted Nunlet (*Nonnula rubecula*) 154–157
PAYNE, R. B.
The mouth markings of juvenal *Vidua regia* and *Uraeginthus granatinus* .. 16–18

Paynter, Raymond A., Jnr.
  Species with Malaysian affinities in the Sundarbans, East Pakistan .. 118–119
Phillips, Allan R.
  A northern race of lark supposedly breeding in Mexico 115–116
Plage, G. D.
  See Urban
Prescott, Kenneth W.
  A new subspecies of the Common Iora fron North Borneo 39–40
Prevost, J.
  See Erard
Roux, F. and Benson, C. W.
  The Red-chested Flufftail *Sarothrura rufa* in the Central African Republic .. 117
Siegfried, W. R.
  See Frost
Smith, K. D.
  The Waldrapp *Geronticus eremita* (L). 18–24
Special General Meeting 145
Stjernstedt, R.
  Birds in *Brachystegia microphyllum* in southern Tanzania 28–31
Stuart Irwin, M. P. and Benson, C. W.
  Some Rhodesian and Mozambique records of the Bronze-naped Pigeon *Columba delegorguei* Delegorgue 131–132
Traylor, Melvin A.
  Two new birds from the Ivory Coast 78–80
  A new race of Serinus *citrinelloides* 83–86
Urban, Emil K.
  An illustrated talk on bird colonies breeding on islands in Lake Shala, Ethiopia 117
Urban, Emil K., Brown, L. H., Buer, C. E. and Plage, G. D.
  Four descriptions of nesting, previously undescribed, from Ethiopia .. 162
  See also Brown
Walker, C. A.
  See Harrison, C. J. O.
Williams, Murray
  An illustrated talk on New Zealand Waterfowl Research and Conservation 145
Wright, E. N.
  A talk on bird strikes on aircraft 89
Wurster, C. F.
  See Buckley

INDEX TO SCIENTIFIC NAMES

(Compiled by Dr. P. J. K. and Mrs. J. M. Burton)

Generic and specific names are indexed. Only new subspecific names are included. These are indexed under the generic and the subspecific names.

abbotti, Sula 170
abdimii, Ciconia 94
— Sphenorhynchus 121
abingoni, Campethera 153
abyssinica, Hirundo 160
— Zosterops 129–131
abyssinicus, Turdus 52
Acanthis flammea 15
Accipiter 3
— fasciatus 24
— ovampensis 2
— tachiro 3, 143
Acryllium vulturinum 143
Actophilornis africana 143
acuta, Anas 122
adspersus, Francolinus 159
adusta, Muscicapa 51–52
Aegithina tiphia 39
Aegithina tiphia trudiae, *subsp. nov.* 39
aegyptiacus, Alopochen 103
aequatorialis, Apus 152
aereus, Ceuthmochares 30, 144
Aerops albicollis 121
aeruginosus, Circus 47, 171
aestiva, Amazona 45
aethiopica, Threskiornis 68–73, 101, 103–104, 121, 143
afer, Turtur 144
affinis, Apus 48, 152, 160
— Aythya 86
afra, Nectarinia 53
africana, Actophilornis 143
— Mirafra 52
africanus, Bubo 144
— Phalacrocorax 101–102, 104, 142
Agapornis fischeri 144
— pullaria 46
aguimp, Motacilla 50
Alaemon alaudipes 56
Alauda arvensis 64
alaudipes, Alaemon 56
alba, Egretta 102, 142
— Gygis 14
— Motacilla 56
— Platalea 101–104, 143
— Tyto 109
albiceps, Psalidoprocne 50
albicollis, Aerops 121
— Corvus 51
— Merops 153
albifrons, Sterna 108
albinucha, Columba 144
albitorques, Columba 105–106
albiventris, Halcyon 153
albogularis, Hirundo 160
albonotatus, Trochocercus 50, 52
alboterminatus, Tockus 51–52, 153
albus, Corvus 40, 51
Alcedo cristata 153
— quadribrachys 152–153
— semitorquata 152–153
alchata, Pterocles 109
Alectoris chukar 34–35
Alethe anomala 52
— fuelleborni 52
alexandri, Psittacula 46
Alisterus amboinensis 46
alleni, Porphyrio 171
alopex, Megalurus timoriensis 112–115
Alopochen aegyptiacus 103
alpestris, Eremophila 115–116
Alseonax 80
Amazona aestiva 45
— autumnalis 45
— barbadensis 45
— farinosa 45
— guildingii 45
— imperialis 45
— leucocephala 45
— ochrocephala 45
amboinensis, Alisterus 46
amethystina, Nectarinia 11
Ammomanes 65
— cinctura 56
— deserti 56, 62–63
Anas acuta 122
— capensis 143
— clypeata 122
— crecca 122
— erythrorhynchos 143
— hottentota 143
— querquedula 122
— sparsa 82, 143
— undulata 143
Anastomus lamelligerus 101, 103–104, 121
Andropadus tephrolaemus 50, 52
angolensis, Gypohierax 158
— Hirundo 50, 53, 160
— Pitta 24, 30
Anhinga rufa 101–102, 104, 142
annamarulae, Melaenornis 145–148
Anodorhynchus leari 44
anomala, Alethe 52
— Bessonornis 28, 31
Anous stolidus 14
antarcticus, Lopholaimus 106

Anthreptes collaris 135
— longuemarei 11
Anthus novaeseelandiae 52
— pratensis 56
— spinoletta 56
Apalis thoracica 53
Apaloderma narina 2–3, 152
— vittatum 52, 152
apiaster, Merops 48, 51, 121
Aplopelia larvata 144
Apus aequatorialis 152
— affinis 48, 152, 160
— apus 48
— barbatus 152
— caffer 49, 52, 152, 160
— horus 160
— melba 48, 152
— niansae 152
armatus, Hoplopterus 159
Aquila rapax 143, 158
— wahlbergi 158
Ara nobilis 44
— spixii 44
arabs, Ardeotis 94, 121
Aratinga auricapillus 44
— canicularis 44
— holochlora 44
— jandaya 44
Ardea cinerea 148, 150, 152
— goliath 143, 148–152
— herodias 148, 150, 152
— melanocephala 96, 101–102, 104, 143, 148, 150
— purpurea 143, 148
Ardeola ibis 49, 142
— lepida 170
— ralloides 101–104
ardeola, Dromas 143
Ardeotis arabs 94, 121
— kori 92–93, 95
ardesiaca, Melaenornis 146, 148
argentatus, Larus 40
ariel, Fregata 169–170
armatus, Vanellus 143
arquatrix, Columba 52, 106, 144
arvensis, Alauda 64
Asio capensis 144
astrild, Estrilda 53
aterrima, Pterodroma 169
atra, Chalcopsitta 43
atricapilla, Sylvia 50, 52, 57
auricapillus, Aratinga 44
auritus, Nettapus 143
australis, Treron 144
autumnalis, Amazona 45
Aviceda cuculoides 82
avosetta, Recurvirostra 143
Aythya affinis 86
— ferina 86
— fuligula 86
baglafecht, Ploceus 53
balaenarum, Sterna 160
Balaeniceps rex 119
Balearica pavonina 94, 103, 143
barbadensis, Amazona 45
barbarus, Laniarius 133–134
barbatus, Apus 152
— Gypaetus 120
— Pycnonotus 50, 52
batesi, Nectarinia 134
Batis capensis 50, 52
belcheri, Pachyptila 169
bengalensis, Sterna 48
benghalensis, Rostratula 143
— Sterna 144
Bessonornis anomala 28, 31
biarmicus, Falco 60, 107, 143, 159
bicolor, Dendrocygna 143
— Ploceus 31
— Symplectes 31
bidentatus, Lybius 153
bifasciata, Nectarinia 11–13, 134
bilineatus, Pogoniulus 153
bilopha, Eremophila 56
Biziura 6–7, 10, 166–167
— delautouri 166–168
— exhumata 168
— lautouri 6–9, 167
— lobata 6–10, 166–168
bollei, Phoeniculus 153
bonapartei, Gymnobucco 153
borin, Sylvia 48, 50, 52
bornea, Eos 43, 91
Bostrychia 72, 73
brachydactyla, Calandrella 109
brachypterus, Buteo 141
brachyrhynchos, Corvus 41
Bradornis 147
Bradypterus cinnamomeus 53
— graueri 26–27
— mariae 53
brevicauda, Paradigalla 122–123
brittoni, Serinus citrinelloides 85–86
Brotogeris jugularis 44
Bubo africanus 144
— capensis 144
— lacteus 144
Bubulcus ibis 101–104, 120
Buccanodon duchaillui 153
— leucotis 153
— olivaceum 153
Bucorvus cafer 153
Budytes 121–122
bulocki, Merops 153
Buphagus 95
— erythrorhynchus 164
Burhinus capensis 49, 143
— vermiculatus 143
Buteo 136–138
— brachypterus 141

Buteo, buteo 60, 140–141
— oreophilus 136, 139–141
— rufinus 60
— rufofuscus 3, 51
Butorides striatus 142

Cacatua galerita 44
— haematuropygia 44
caerulescens, Rallus 143
caeruleus, Elanus 49, 52
cafer, Bucorvus 153
caffer, Apus 49, 52, 152, 160
caffra, Cossypha 52
caillautii, Campethera 153
Calandrella brachydactyla 109
— cinerea 56
Calidris canutus 159
— minuta 47
calva, Geronticus 18
Calyptorhynchus magnificus 44
camelus, Struthio 59, 92, 94
Campephaga sulphurata 31
Campethera abingoni 153
— caillautii 153
— caroli 153
— nivosa 78–79, 154
Campethera nivosa maxima, ***subsp. nov.*** 79
Campethera nubica 153
— tullbergi 154
caniceps, Psittacula 46
canicollis, Serinus 51, 53
canicularis, Aratinga 44
canorus, Cuculus 48, 144
cantans, Cisticola 51, 53
— Euodice 136
cantillans, Sylvia 48, 110
canutus, Calidris 159
capensis, Anas 143
— Asio 144
— Batis 50, 52
— Bubo 144
— Burhinus 49, 143
— Corvus 41
— Oena 144
— Smithornis 30, 49, 52, 164–166
capicola, Streptopelia 144
capistratus, Serinus 83–84
Caprimulgus 60
— climacurus 144
— europaeus 25, 135
— fossii 144
— fraenatus 144
— inornatus 144
— natalensis 144
— poliocephalus 52, 144
— stellatus 144
— tristigma 144
caprius, Chrysococcyx 144
carbo, Phalacrocorax 101–102, 104, 142
Carduelis chloris 63
caroli, Campethera 153
Carphibis 67–68, 72–73
— spinicollis 68–69, 72
carruthersi, Cisticola 26, 28
caudata, Coracias 153
Centropus monachus 144
— superciliosus 144
— toulou 144
Cercococcyx mechowi 144
— montanus 30
Cercomela familiaris 127
Cercotrichas podobe 58
Ceryle maxima 152
— rudis 103, 152
Ceuthmochares aereus 30, 144
Ceyx lecontei 153
— picta 153
Chaetura sabini 152
— ussheri 152
Chalcopsitta atra 43
— sintillata 43
chalcopterus, Pionus 45
chalcospilos, Turtur 144
chalybea, Nectarinia 11
Charadrius dubius 47
— hiaticula 171
— marginatus 143
— pallidus 143
— pecuarius 143
— tricollaris 143
Charmosyna pulchella 43
chelicuti, Halcyon 153
Chersophilus duponti 55
chicquera, Falco 159
Chlidonias hybrida 121, 160
— leucoptera 121, 160
— nigra 160
chloris, Carduelis 63
— Nicator 31
chlorocephalus, Oriolus 29
chlorocercus, Lorius 43
chloronothos, Zosterops 82
Chloropeta natalensis 50, 52
— similis 50, 52
chloropus, Gallinula 108, 143, 171
chocolatina, Melaenornis 50, 52
Chrysococcyx caprius 144
— klaas 144
chrysoconus, Pogoniulus 153
chrysopterygius, Psephotus 46
chukar, Alectoris 34–35
chuni, Homopelia 32
— Streptopelia 34
Ciconia adbimii 94
— ciconia 59, 94, 122
— episcopus 143
cinctura, Ammomanes 56
cinctus, Cursorius 143
cinerascens, Fraseria 146

cinerea, Ardea 148, 150, 152
— Calandrella 56
— Pachycephala 118
cinnamomeus, Bradypterus 53
Cinnyricinclus leucogaster 51
Circaetus pectoralis 158
Circus aeruginosus 47, 171
— macrourus 107
cirrhocephalus, Larus 144
Cissa 41
Cisticola 69
— cantans 51, 53
— carruthersi 26, 28
— hunteri 53
— lais 53
— njombe 53
citrinelloides, Serinus 51, 53, 83–85
Clamator jacobinus 144
— levaillantii 144
clamosus, Cuculus 144
climacurus, Caprimulgus 144
clypeata, Anas 122
coelebs, Fringilla 15
colchicus, Phasianus 41
Colius macrourus 152
— striatus 51–52, 152
collaris, Anthreptes 135
— Lanius 51, 53
collurio, Lanius 41
collybita, Phylloscopus 57
Columba albinucha 144
— albitorques 105–106
— arquatrix 52, 106, 144
— delegorguei 131–132, 144
— leuconota 106
— livia 60, 62
comata, Geronticus 72–73
communis, Sylvia 160
concolor, Corythaixoides 160
— Falco 171
conspicillata, Sylvia 110
coqui, Francolinus 143
Coracias caudata 153
— garrulus 14, 48
— naevia 153
Coracopsis nigra 45
corax, Corvus 40
cornutus, Eunymphicus 46
coronatus, Pterocles 60, 109
— Stephanoaetus 51
— Vanellus 143
corone, Corvus 40
coronoides, Corvus 41
Corvus albicollis 51
— albus 40, 51
— brachyrhynchos 41
— capensis 41
— corax 40
— corone 40
— coronoides 41
Corvus dauricus 41
— frugilegus 40
— macrorhynchos 41
— monedula 40–41
— ruficollis 41, 59, 107
— splendens 41
— torquatus 40
Corythaeola cristata 144
Corythaixoides concolor 160
— personata 144
Cossypha 30
— caffra 52
Coturnix coturnix 171
— delegorguei 143
crassirostris, Hemiparra 159
— Hypsipetes 14
— Vanellus 143
crecca, Anas 122
Crinifer zonurus 144
cristata, Alcedo 153
— Corythaeola 144
— Fulica 143
cristatus, Podiceps 142
cruentata, Pyrrhura 44
crumeniferus, Leptoptilos 121, 143
Cryptospiza reichenovii 49, 51, 53
cryptoxanthus, Poicephalus 144
cuculoides, Aviceda 82
Cuculus canorus, 48, 144
— clamosus 144
— solitarius 51, 144
Cuncuma vocifer 103
cuprea, Nectarinia 11
cursor, Cursorius 60, 108, 143
Cursorius cinctus 143
— cursor 60, 108, 143
— temminckii 143
cuvieri, Falco 159
Cyanocitta 41
cyanomelas, Trochocercus 30
Cyanopica 41
Cypsiurus parvus 152

darnaudii, Trachyphonus 153
daurica, Hirundo 48, 50, 53
dauricus, Corvus 41
davisoni, Graptocephalus 67
— Pseudibis 67, 73
debilis, Phyllastrephus 29
decipiens, Streptopelia 144
deckeni, Tockus 153
decoratus, Pterocles 144
delautouri, Biziura 166–168
delegorguei, Columba 131–132, 144
— Coturnix 143
Delichon urbica 48, 56, 121
Dendrocitta 41
Dendrocygna bicolor 143
Dendropicos fuscescens 154
— obsoletus 154

Dendropicos poecilolaemus 154
deserti, Ammomanes 56, 62–63
— Oenanthe 58
deserticola, Sylvia 57
Dicaeum trigonostigma 119
Dicrurus 147
— ludwigii 147
dionysiana, Gallinula 171
Dioptrornis 147
discurus, Prioniturus 45
dominicanus, Larus 159–160
domesticus, Passer 34–35, 59
Dromas ardeola 143
dubius, Charadrius 47
duchaillui, Buccanodon 153
duponti, Chersophilus 55

Eclectus roratus 45
edolioides, Melaenornis 146
Egretta alba 102, 142
— garzetta 47, 99, 102
— intermedia 99, 101–102, 104
Elanus caeruleus 49, 52
eleonorae, Falco 171
Emberiza 64
— schoeniclus 64
— striolata 59, 62–63
Empidornis 147
Eos 91
— bornea 43, 91
— goodfellowi 91
— rubra 43
episcopus, Ciconia 143
epops, Upupa 60, 153
eremita, Geronticus 18–20, 23, 72–73
Eremophila alpestris lactea, *subsp. nov.* 115–116
Eremophila alpestris 115–116
— bilopha 56
erythrocephalus, Trachyphonus 153
Erythrocercus livingstonii 30
erythrogaster, Laniarius 133
Erythropygia quadrivirgata 31
erythrorhynchos, Anas 143
erythrorhynchus, Buphagus 164
— Tockus 153, 163
Estrilda astrilid 53
— granatina 161
— melanotis 53
— paludicola 161
Eudocimus ruber 76
Eunymphicus cornatus 46
Euodice cantans 136
Euplectes orix 36
— psammocromius 51, 53
Eopodotis hartlaubii 143
— melanogaster 143
europaea, Sitta 64
europaeus, Caprimulgus 25, 135
Eurystomus glaucurus 153
euteles, Trichoglossus 43
excubitor, Lanius 56, 109
exhumata, Biziura 168
exilis, Indicator 153
— Loriculus 46
exustus, Pterocles 144

falcinellus, Plegadis 20, 122
Falco biarmicus 60, 107, 143, 159
— chicquera 159
— concolor 171
— cuvieri 159
— eleonorae 171
— pelegrinoides 108
— peregrinus 6, 108, 171
— tinnunculus 60
familiaris, Cercomela 127
farinosa, Amazona 45
fasciatus, Accipter 24
ferina, Aythya 86
ferrugineus, Laniarius 50, 53
fischeri, Agapornis 144
— Tauraco 144
— Vidua 16
flammea, Acanthis 15
flava, Motacilla 50, 52, 107
flavirostra, Limnocorax 143
flavostriatus, Phyllastrephus 51–52
fluviatilis, Locustella 47
fossii, Caprimulgus 144
fraenatus, Caprimulgus 144
Francolinus adspersus 159
— coqui 143
— hildebrandti 51–52
— leucoscepus 143
— psilolaemus 143
— sephaena 143
— squamatus 143
Fraseria 146–148
— cinerascens 146
— ocreata 146–147
Fregata ariel 169–170
— minor 169–170
Fregetta tropica 169
Fringilla 15
— coelebs 15
frontalis, Pyrrhura 44
— Serinus 83–84, 86
frugilegus, Corvus 40
fuelleborni, Alethe 52
— Laniarius 51, 53
Fulica cristata 143
fuligula, Aythya 86
fulvus, Turdoides 58
fuscescens, Dendropicos 154
fuscus, Larus 160
— Pionus 45

gabar, Melierax 2
galerita, Cacatua 44

galinieri, Parophasma 163
Gallinago gallinago 47
— nigripennis 143
Gallinula chloropus 108, 143, 171
— dionysiana 171
gambensis, Plectropterus 143
Garrulus 41
— glandarius 40
garrulus, Coracias 14, 48
garzetta, Egretta 99, 102
genei, Larus 48
Geronticus 67, 72
— calva 18
— comata 72–73
— eremita 18–20, 23, 72–73
gigantea, Pseudibis 67
githaginea, Rhodopechys 59, 62–63, 110
glandarius, Garrulus 40
Glareola nordmanni 121
— pratincola 121, 144, 159
Glaucidium perlatum 144
glaucurus, Eurystomus 153
goertae, Mesopicos 154
goliath, Ardea 143, 148–152
goodfellowi, Eos 91
granatina, Estrilda 161
granatinus, Uraeginthus 16–18
Graptocephalus davisoni 67
graueri, Bradypterus 26–27
griseigulare, Muscicapa 79–80
griseocephalus, Mesopicos 52, 154
griseopyga, Pseudhirundo 160
grisola, Tephrodornis 118
grus, Megalornis 121
guifsobalito, Lybius 153
guildingii, Amazona 45
gurneyi, Turdus 50, 52
gutturalis, Pterocles, 144
Gygis alba 14
Gymnobucco bonapartei 153
Gypaetus barbatus 120
Gypohierax angolensis 158

haematodus, Trichoglossus 43
haematuropygia, Cacatua 44
Hagedashia 73
Halcyon albiventris 153
— chelicuti 153
— leucocephala 103, 153
— senegalensis 153
haliaetus, Pandion 103
Haliaeetus vocifer 158–159
— vociferoides 171
hartlaubi, Tauraco 144
hartlaubii, Eupodotis 143
Hemiparra crassirostris 159
hemprichii, Larus 144
— Tockus 153, 163
herodias, Ardea 148, 150, 152
hiaticula, Charadrius 171
hildebrandti, Francolinus 51–52
Himantopus himantopus 47, 122, 143
Hippolais pallida 57, 109–110
Hirundo abyssinica 160
— albigularis 160
— angolensis 50, 53, 160
— atrocaerulea 53
— daurica 48, 50, 53
— obsoleta 56, 109
— rustica 48, 53, 121, 160
— senegalensis 51, 160
— smithii 160
hirundo, Sterna 40, 160
hispaniolensis, Passer 59, 111
holochlora, Aratinga 44
Homopelia chuni 32
Hoplopterus armatus 159
horus, Apus 160
hottentota, Anas 143
hunteri, Cisticola 53
hybrida, Chlidonias 121, 160
Hypochera 16
hypoleucos, Tringa 47
Hypsipetes crassirostris 14

ianthinogaster, Uraeginthus 16
Ibis ibis 143
ibis, Ardeola 49, 142
— Bubulcus 101–104, 120
— Ibis 143
imperialis, Amazona 45
Indicator exilis 153
— meliphilus 153
— minor 153
— variegatus 153
Inocotis papillosus 67
inornatus, Caprimulgus 144
inquieta, Scotocerca 110
insignis, Prodotiscus 129–131, 153
interfluvialis, Nonnula rubecula 155–156
intermedia, Egretta 99, 101–102, 104
isabellina, Oenanthe 58
Ispidina picta 103
Ixobrychus minutus 142
— sinensis 170–171
— sturmii 142

jandaya, Aratinga 44
johnstoniae, Psitteuteles 43
jugularis, Brotogeris 44
Jynx ruficollis 153

kilimensis, Nectarinia 53
klaas, Chrysococcyx 144
koliensis, Serinus 83–86
kori, Ardeotis 92–93, 95
krameri, Psittacula 46

lacrymosus, Lybius 153
lactea, Eremophila alpestris 115–116
lacteus, Bubo 144

lafresnayii, Merops 153
Lagonosticta rubricata 51, 53
— senegala 59
lais, Cisticola 53
lamelligerus, Anastomus 101, 103–104, 121
Lampribis 73
Laniarius 133
— barbarus 133–134
— ferrugineus 50, 53
— fuelleborni 51, 53
— mufumbiri 133–134
Lanius collaris 51, 53
— collurio 41
— excubitor 56, 109
— nubicus 134
— senator 48, 134
lapponica, Limosa 159
Larus argentatus 40
— cirrhocephalus 144
— dominicanus 159–160
— fuscus 160
— genei 48
— hemprichii 144
larvata, Alopelia 144
lautouri, Biziura 6, 9, 167
leari, Anodorhynchus 44
lecontei, Ceyx 153
lepida, Ardeola 170
Leptoptilos crumeniferus 121, 143
leucocephala, Amazona 45
— Halcyon 103, 153
leucocephalus, Lybius 153, 161–162
leucogaster, Cinnyricinclus 51
— Pionites 44
leucomelas, Lybius 153
leucomystax, Pogoniulus 49, 52, 153
leuconota, Columba 106
leuconotus, Thalassornis 143
leucoptera, Chlidonias 121, 160
leucopyga, Oenanthe 57, 62–63
leucoscepus, Francolinus 143
leucotis, Buccanodon 153
— Pyrrhura 44
— Tauraco 157
levaillantii, Clamator 144
lherminieri, Puffinus 169
Limnocorax flavirostra 143
Limosa lapponica 159
livia, Columba 60, 62
livingstonii, Erythrocercus 30
— Tauraco 144
lobata, Biziura 6–10, 166–168
Locustella fluviatilis 47
— luscinioides 47
Lonchura malabarica 136
longipennis, Macrodypteryx 144
longuemarei, Anthreptes 11
Lophaetus occipitalis 3, 4
Lopholaimus antarcticus 106
Lophotibis 63
Loriculus exilis 46
— philippensis 46
Lorius chlorocercus 43
— lory 43
— tibialis 43
lory, Lorius 43
lucionensis, Tanygnathus 45
ludwigii, Dicrurus 147
lugens, Oenanthe 110
— Streptopelia 144
lugubris, Stephanibyx 159
— Vanellus 143
luscinioides, Locustella 47
Lybius bidentatus 153
— guifsobalito 153
— lacrymosus 153
— leucocephalus 153, 161–162
— leucomelas 153
— melanocephalus 153
— melanopterus 153

maccoa, Oxyura 143
Macrodypteryx longipennis 144
— vexillarius 144
macrorhynchos, Corvus 41
macrourus, Circus 107
— Colius 152
magnificus, Calyptorhynchus 44
malabarica, Lonchura 136
Malaconotus multicolour 51
— viridis 31
Mandingoa nitidula 51, 53
marginatus, Charadrius 143
mariae, Bradypterus 53
marina, Pelagodroma 33–37
maxima, Campethera nivosa 79
maxima, Ceryle 152
mechowi, Cercococcyx 144
mediocris, Nectarinia 53
megalorhynchus, Tanygnathus 45
Megalornis grus 121
Megalurus 112
— timoriensis 111–115
Megalurus timoriensis alopex, *subsp. nov.* 112–115
meiffrenii, Ortyxelos 144
Melaenornis 145–148
Melaenornis annamarulae, *sp. nov.* 145–148
Melaenornis ardesiaca 146, 148
— chocolatina 50, 52
— edolioides 146
— pammelaina 146
melanocephala, Ardea 96, 101–102, 104, 143, 148, 150
— Sylvia 57, 110
— Threskiornis 68–73
melanocephalus, Lybius 153
— Vanellus 162

melanogaster, Eupodotis 143
— Thalassidroma 169
melanopterus, Lybius 153
— Vanellus 143
melanota, Sarkidiornis 143
melanotis, Estrilda 53
melba, Apus 48, 152
meleagris, Numida 92–93, 96, 143
Melierax gabar 2
meliphilus, Indicator 153
Merops albicollis 153
— apiaster 48, 51, 121
— bulocki 153
— lafresnayii 153
— muelleri 153
— nubicus 92, 95–96, 120
— nubicoides 95
— pusillus 153
— superciliosus 96, 153
merula, Turdus **6**
Mesopicos goertae 154
— griseocephaus 52,154
— xantholophus 154
meyeri, Poicephalus 144
Micropsitta pusio 43
migrans, Milvus 49, 52, 60
Milvus migrans 49, 52, 60
minor, Fregata 169–170
— Indicator 153
— Phoenicopterus 143
— Phoeniculus 153
minulla, Nectarinia 134
minuta, Calidris 47
— Tchagra 50, 133
minutus, Ixobrychus 142
Mirafra africana 52
molucca, Threskiornis 68–73
moluccensis, Pitta 24–25, 118
monachus, Centropus 144
monedula, Corvus 40–41
montanus, Cercococcyx 30
Motacilla 121
— aguimp 50
— alba 56
— flava 50, 52, 107
muelleri, Merops 153
mufumbiri, Laniarius 133–134
mulleri, Tanygnathus 45
multicolor, Malaconotus 51
Muscicapa 80
— adusta 51–52
— griseigulare 79–80
Muscicapa griseigulare parelii, *subsp. nov.* 80
Muscicapa striata 48
myoptilus, Schoutedenapus 49

naevia, Coracias 153
namaquus, Thripias 154
nana, Sylvia 57, 110
narina, Apaloderma 2–3, 152
nasutus, Tokus 153, 163
natalensis, Caprimulgus 144
— Chloropeta 50, 52
natalis, Zosterops 24
Nectarinia 135
— afra 53
— amethystina 11
— batesi 134
— bifasciata 11–13, 134
— chalybea 11
— cuprea 11
— kilimensis 53
— mediocris 53
— minulla 134
— senegalensis 134–135
— shelleyi 13
— sovimanga 11, 134
— talatala 11
— venusta 13, 134
— verticalis 51, 53
Neocossyphus rufus 2, 5, 30
Neophron percnopterus 60
Nettapus auritus 143
niansae, Apus 152
Nicator chloris 31
nigra, Chlidonias 160
— Coracopsis 45
nigripennis, Gallinago 143
Nipponia 73
nitidula, Mandingoa 51, 53
nivosa, Campethera 78–79, 154
njombe, Cisticola 53
nobilis, Ara 44
Nonnula 154
— rubecula 154–156
Nonnula rubecula interfluvialis, *subsp. nov.* 155–156
Nonnula rubecula simulatrix, *subsp. nov.* 155–156
nordmanni, Glareola 121
novaeseelandiae, Anthus 52
nubica, Campethera 153
nubicoides, Merops 95
nubicus, Lanius 134
— Merops 91, 95–96, 120
Numida meleagris 92–93, 96, 143
Nycticorax nycticorax 101, 103–104

obsoleta, Hirundo 56, 109
obsoletus, Dendropicos 154
occipitalis, Lophaetus 3–4
— Trigonoceps 49
ochrocephala, Amazona 45
ochropus, Tringa 47
ochruros, Phoenicurus 58
ocreata, Fraseria 146–147
Oena capensis 144
Oenanthe deserti 58
— isabellina 58

Oenanthe leucopyga 57, 62–63
— lugens 110
— oenanthe 109, 124–128
— pileata 124, 127
olivacea, Zosterops 81
olivaceum, Buccanodon 153
olivaceus, Turdus 5
onocrotalus, Pelecanus 142
Onychognathus salvadorii 164
oreophilus, Buteo 136, 139, 141
Oriolus chlorocephalus 29
ornatus, Trichoglossus 43
Ortyxelos meiffrenii 144
ovampensis, Accipiter 2
Oxyura maccoa 143

Pachycephala cinerea 118
Pachyptila belcheri 169
— turtur 169
pallida, Hippolais 57, 109–110
pallidirostris, Tockus 153
pallidus, Charadrius 143
paludicola, Estrilda 161
pammelaina, Melaenornis 146
Pandion haliaetus 103
papillosa, Pseubidis 67, 73
papillosus, Inocotis 67
Paradigalla brevicauda 122–123
parelii, Muscicapa griseigulare 80
Parisoma plumbeum 30
Parophasma galinieri 163
Parus 65
parvus, Cypsiurus 152
Passer domesticus 34–35, 59
— hispaniolensis 59, 111
— simplex 111
pavonina, Balearica 94, 103, 143
pectoralis, Circaetus 158
pecuarius, Charadrius 143
Pelagodroma marina 35–37
Pelecanus onocrotalus 142
— rufescens 103
pelegrinoides, Falco 108
peltata, Platysteira 130
pelzelni, Ploceus 161
percnopterus, Neophron 60
peregrinus, Falco 6, 108, 171
perlatum, Glaucidium 144
persa, Tauraco 52
personata, Corythaixoides 144
peruviana, Vini 43
petrosus, Ptilopachus 143
Phalacrocorax africanus 101–102, 104, 142
— carbo 101–102, 104, 142
Phasianus colchicus 41
philippensis Loriculus 46
— Rallus 171
Philomachus pugnax 47, 121
Phoenicopterus minor 143
— ruber 74–78, 143
Phoeniculus bollei 153
— minor 153
— purpureus 153
Phoenicurus ochruros 58
Phyllastrephus debilis 29
— flavostriatus 51–52
Phylloscopus collybita 57
— trochilus 51–52
Pica 41
— pica 40
picta, Ceyx 153
picturata, Streptopelia 32–35
Picus viridanus 118
— vittatus 118
pileata, Oenanthe 124, 127
Pionites leucogaster 44
Pionus chalcopterus 45
— fuscus 45
— senilis 44
— sordidus 44
Pitta angolensis 24, 30
— moluccensis 24–25, 118
— vigorsii 24
Platalea alba 101–104, 143
Platysteira peltata 130
Plectropterus gambensis 143
Plegadis 73
— falcinellus 20, 122
Ploceus baglafecht 53
— bicolor 31
— pelzelni 161
plumbeum, Parisoma 30
Podica senegalensis 82
Podiceps cristatus 142
— ruficollis 142
podobe, Cercotrichas 58
poecilaemus, Dendropicos 154
Pogoniulus bilineatus 153
— chrysoconus 153
— leucomystax 49, 52, 153
— pusillus 153
— scolopaceus 153
— simplex 153
Pogonocichla stellata 52
Poicephalus cryptoxanthus 144
— meyeri 144
— rufiventris 45, 144
— senegalus 45
poliocephalus, Caprimulgus 52, 144
porphyreolophus, Tauraco 144
Porphyrio alleni 171
— porphyrio 143
pratensis, Anthus 56
pratincola, Glareola 121, 144, 159
Prion turtur 169
Prioniturus discurus 45
Prodotiscus 130
— insignis 129–131, 153
Psalidoprocne albiceps 50
psammocromius, Euplectes 51, 53

Psephotus chrysopterygius 46
Pseudhirundo griseopyga 160
Pseudibis 67, 73,
— davisoni 67, 73
— papillosa 67, 73
Pseudopodoces 41
psilolaemus, Francolinus 143
Psittacula alexandri 46
— caniceps 46
— krameri 46
— roseata 45–46
Psitteuteles johnstoniae 43
Pterocles alchata 109
— coronatus 60, 109
— decoratus 144
— exustus 144
— gutturalis 144
— senegallus 109
Pterodroma aterrima 169
Ptilopachus petrosus 143
Ptilostomus 41
Puffinus lherminieri 169
pugnax, Philomachus 47, 121
pulchella, Charmosyna 43
pullaria, Agapornis 46
purpuratus, Trachyphonus 153
purpurea, Ardea 143, 148
purpureus, Phoeniculus 153
pusillus, Merops 153
— Pogoniulus 153
pusio, Micropsitta 43
Pycnonotus barbatus 50, 52
Pyrrhocorax 41
— pyrrhocorax 40
Pyrrhura cruentata 44
— frontalis 44
— leucotis 44

quadribrachys, Alcedo 152–153
quadricolor, Telophorus 31
quadrivirgata, Erythropygia 31
querquedula, Anas 122

ralloides, Ardeola 101–104, 170
Rallus caerulescens 143
— philippensis 171
rapax, Aquila 143, 158
Recurvirostra avosetta 143
regia, Vidua 16–18
Regulus regulus 65
reichenovii, Cryptospiza 49, 51, 53
rex, Balaeniceps 119
Rhodopechys 64
— githaginea 59, 62–63, 110
Riparia riparia 48, 121
riparia, Riparia, 48, 121
roratus, Eclectus 45
roseata, Psittacula 45–46
Rostratula benghalensis 143
rubecula, Nonnula 154–156
ruber, Eudocimus 76
— Phoenicopterus 74–78, 143
rubetra, Saxicola 49
rubra, Eos 43
rubricata, Lagonosticta 51, 53
rudis, Ceryle 103, 152
rufa, Anhinga 101–102, 104, 142
— Sarothrura 117
rufescens, Pelecanus 103
ruficollis, Corvus 41, 59, 107
— Jynx 153
— Podiceps 142
rufinus, Buteo 60
rufiventer, Terpsiphone 160
rufiventris, Poicephalus 45, 144
rufofuscus, Buteo 3, 51
rufus, Neocossyphus 2, 5, 30
ruspolii, Tauraco 157
rustica, Hirundo 48, 53, 121, 160

sabini, Chaetura 152
Sagittarius serpentarius 92–93
salvadorii, Onychognathus 164
Sarkidiornis melanota 143
Sarothrura rufa 117
Saxicola rubetra 49
— torquata 52, 57, 127
schoeniclus, Emberiza 64
Schoutedenapus myoptilus 49
schutti, Tauraco 144
scolopaceus, Pogoniulus 153
Scopus umbretta 143
Scotocerca inquieta 110
scotops, Serinus 83
semitorquata, Alcedo 152–153
— Streptopelia 144
senator, Lanius 48, 134
senegala, Lagonosticta 59
— Tchagra 50
senegalensis, Halcyon 153
— Hirundo 51, 160
— Nectarinia 134–135
— Podica 82
— Streptopelia 60, 144
— Zosterops 53, 130–131
senegallus, Pterocles 109
— Vanellus 143
senegalus, Poicephalus 45
senilis, Pionus 44
sephaena, Francolinus 143
Serinus 51, 83
— canicollis 51, 53
— capistratus 83–84
— citrinelloides 51, 53, 83–86
Serinus citrinelloides brittoni, *subsp. nov.* 85–86
Serinus frontalis 83–84, 86
— koliensis 83–86
— scotops 83
— striolatus 51, 53

Serinus sulphuratus 51, 53
serpentarius, Sagittarius 92–93
shelleyi, Nectarinia 13
Sigelus 147
similis, Chloropeta 50, 52
simplex, Passer 111
  — Pogoniulus 153
simulatrix, Nonnula rubecula 155–156
sinensis, Ixobrychus 170–171
sintillata, Chalcopsitta 43
Sitta europea 65
smithii, Hirundo 160
Smithornis capensis 30, 49, 52, 164–166
solitarius, Cuculus 51, 144
sordidus, Pionus 44
sovimanga, Nectarinia 11, 134
sparsa, Anas 82, 143
Sphenorhynchus abdimii 121
spinicollis, Carphibis 68–69, 71
spinoletta, Anthus 56
spinosus, Vanellus 143
Spinus 83
spixii, Ara 44
splendens, Corvus 41
squamatus, Francolinus 143
Steganura 16
stellata, Pogonocichla 52
stellatus, Caprimulgus 144
Stephanibyx lugubris 159
Stephanoaetus coronatus 51
Sterna albifrons 108
  — balaenarum 160
  — bengalensis 48, 144
  — hirundo 40, 160
stolidus, Anous 14
Streptopelia capicola 144
  — chuni 34
  — decipiens 144
  — lugens 144
  — picturata 32–35
  — semitorquata 144
  — senegalensis 60, 144
  — turtur 60
  — vinacea 144
striata, Muscicapa 48
striatus, Butorides 142
  — Colius 51–52, 152
striolata, Emberiza 59, 62–63
striolatus, Serinus 51, 53
Struthio camelus 59, 92, 94
sturmii, Ixobrychus 142
Sturnus vulgaris 59
Sula abbotti 170
sulphurata, Campephaga 31
sulphuratus, Serinus 51, 53
superciliosus, Centropus 144
  — Merops 96, 153
sylvatica, Turnix 144
Sylvia atricapilla 50, 52, 57
  — borin 48, 50, 52
Sylvia cantillans 48, 110
  — communis 160
  — conspicillata 57, 110
  — deserticola 57
  — melanocephala 57, 110
  — nana 57, 110
Symplectes bicolor 31

tachiro, Accipiter 3, 143
talatala, Nectarinia 11
Tanygnathus lucionensis 45
  — megalorhynchos 45
  — mulleri 45
Tauraco fischeri 144
  — hartlaubi 144
  — leucotis 157
  — livingstonii 30, 144
  — persa 52
  — porphyreolophus 144
  — ruspolii 157
  — schutti 144
Tchagra minuta 50, 133
  — senegala 50
tectus, Vanellus 143
Telophorus quadricolor 31
temminckii, Cursorius 143
Tephrodornis grisola 118
tephrolaemus, Andropadus 50, 52
Terpsiphone rufiventer 160
  — viridis 160
Tetraenura 16
Thalassidroma melanogaster 169
Thalassornis leuconotus 143
Thaumatibis 67, 73
  — gigantea 67
thoracica, Apalis 53
Threskiornis 67–68, 70–73
  — aethiopica 68–73, 101, 103–104, 121, 143
  — melanocephala 68–73
  — molucca 68–73
Thripias namaquus 154
tibialis, Lorius 43
timoriensis, Megalurus 111–115
tinnunculus, Falco 60
tiphia, Aegithina 39
Tockus 163
  — alboterminatus 51–52, 153
  — deckeni 153
  — erythrorhynchus 153, 163
  — hemprichii 153, 163
  — nasutus 153, 163
  — pallidirostris 153
Torgos tracheliotus 158
torquata, Saxicola 52, 57, 127
torquatus, Corvus 40
totanus, Tringa 47
toulou, Centropus 144
tracheliotus, Torgos 158
Trachyphonus darnaudii 153

Trachyphonus erythrocephalus 153
— purpuratus 153
Treron australis 144
Trichoglossus euteles 43
— haematodus 43
— ornatus 43
tricollaris, Charadrius 143
Trigonoceps occipitalis 49
trigonostigma, Dicaeum 119
Tringa hypoleucos 47
— ochropus 47
— totanus 47
tristigma, Caprimulgus 144
trochilus, Phylloscopus 51
Trochocercus albonotatus 50, 52
— cyanomelas 30
tropica, Fregetta 169
trudiae, Aegithina tiphia 39
tullbergi, Campethera 154
Turdoides fulvus 58
Turdus abyssinicus 52
— gurneyi 50, 52
— merula 6
— olivaceus 5
Turnix sylvatica 144
Turtur afer 144
— chalcospilos 144
— tympanistria 51–52, 144
turtur, Pachyptila 169
— Prion 169
— Streptopelia 60
tympanistria, Turtur 51–52, 144
Tyto alba 109, 144

ultramarina, Vini 43
umbretta, Scopus 143
undulata, Anas 143
Upupa epops 60, 153
Uraeginthus granatinus 16–18
— ianthinogaster 16
urbica, Delichon 48, 56, 121
ussheri, Chaetura 152

Vanellus armatus 143
— coronatus 143
— crassirostris 143
— lugubris 143
— melanocephalus 162
— melanopterus 143
— senegallus 143
— spinosus 143
— tectus 143
— vanellus 60
variegatus, Indicator 153
venusta, Nectarinia 13, 134
vermiculatus, Burhinus 143
verticalis, Nectarinia 51
vexillarius, Macrodypteryx 144
Vidua 16
— fischeri 16
— regia 16–18
vigorsii, Pitta 24
vinacea, Streptopelia 144
Vini peruviana 43
— ultramarina 43
viridanus, Picus 118
viridis, Malaconotus 31
— Terpsiphone 160
vittatum, Apaladerma 52, 152
vittatus, Picus 118
vocifer, Cuncuma 103
— Haliaeetus 158–159
vociferoides, Haliaeetus 171
vulgaris, Sturnus 59
vulturinum, Acryllium 143

wahlbergi, Aquila 158

xantholophus, Mesopicos 154

zonurus, Crinifer 144
Zosterops 81, 129–131
— abyssinica 129
— chloronothos 82
— natalis 24
— olivacea 81
— senegalensis 53, 130–131

Corrigenda

p. 25 '*P. b. nympha*' to read '*P. m. nympha*'
'Prhevalski' to read 'Przhevalski'
p. 32 'stystematic' to read 'systematic'
p.121 '*Leptoptilus*' to read '*Leptopilos*'
p. 135 '*Camprimulgus*' to read '*Caprimulgus*'
p. 136 '*Eudice*' to read '*Euodice*'

2 7 AUG 1971

The Caxton & Holmesdale Press, Sevenoak

Bulletin of the

British Ornithologists' Club

Edited by

C. W. BENSON

R

Volume 90 No. 1 February 1970

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, Bt., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

J. H. Elgood

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1970

17th March—Speaker: Mr. J. R. Beck. Subject: The Birds of South Georgia and Orkney Islands. Venue: The Criterion.
19th May, 21st July, 15th September, 17th November. Speakers to be arranged. Venue: The Criterion (except in July).

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 90 No. 1 Published: 20th February, 1970

Minutes of a Special General Meeting held at the Criterion in Piccadilly, London, W.1, on Tuesday, 20th January, 1970, at 6.30 p.m.

Chairman: Dr. J. F. Monk; present: 18 members.

The Chairman, in opening the meeting, explained that the costs of printing the *Bulletin* had been increased by 10% with effect from 1st January, 1970, and that the Committee considered that immediate steps should be taken to reduce the number of free copies which the Club was bound by its Rules to send to contributors. If a single issue had as many as fifteen contributors, this meant that about half the total number printed would be used for this purpose. The existing Rule specified the exact number of free copies and therefore any change involved an amendment of the Rule. The Committee considered that some flexibility was desirable and the proposed amendment therefore left the determination of the number of free copies to the Committee in future. The Committee considered at present that ten free copies would be a adequate number for papers of a substantial length of which the Editor would have discretion to judge.

Mr. C. J. O. Harrison criticised the proposal saying that it may have the result of reducing the numbers of contributions received, taking account also of the restricted circulation of the *Bulletin*. The Chairman said that if this appeared to be the result, the Committee would still have discretion under the proposed amendment to increase the number given free.

After discussion the resolution which was proposed as a special resolution in terms of Rule (14) of the Club's Rules, was moved by the Chairman and seconded by the Hon. Secretary as follows:—

> "That Rule (10) of the Club's Rules shall be amended by the deletion of the second, third and fourth paragraphs thereof and by the substitution of the following:—
>
> 'Contributors shall be entitled to as many free copies of the *Bulletin* as the Committee may from time to time determine but the Committee shall not be obliged to furnish any free copies if a contributor submits for publication an article deemed by the Editor to be a short note.
>
> If contributors desire to exercise this privilege, notice must be given to the Editor when manuscripts are submitted, at which time copies in excess of the number of free copies may also be ordered. Payment for such additional copies shall be made to the Treasurer on demand.
>
> Communications to the *Bulletin* shall not be restricted to members.' "

This was passed with two dissentient votes. The meeting closed at 6.50 p.m.

The six hundred and sixty-second meeting of the Club was then held.

Chairman: Dr. J. F. Monk

Members present: 18; Guests: 6.

Dr. R. K. Murton gave a well-illustrated talk on Ornithology in Hong Kong mentioning the many and various pressures on all animal populations from the rapidly growing human population.

Recent new breeding records for Kenya

Ovampo Sparrowhawk *Accipiter ovampensis*
Narina's Trogon *Apaloderma narina*
Red-tailed Ant-thrush *Neocossyphus rufus*

by L. H. Brown

Received 30th September, 1969

(a) *Accipter ovampenis*. Ovampo Sparrow-hawk.

The Ovampo Sparrowhawk is a rare bird in East Africa. There are specimens in the National Museum, Nairobi, from Kenya at Lumbwa, Makuyu (two), Limuru Road (near Nairobi), and Nairobi, and from Tanzania at Morogoro, but in twenty-three years' residence the only one I have seen, apart from the present instance, was an immature at Soy, Trans Nzoia District, Kenya. The records indicate that the species is to be found sparingly in Acacia—Commiphora thornbush and broad-leaved *Combretum* savannas.

On 28th September, 1968, a nest was found in mixed *Olea-Croton-Calodendron* forest at Karen, Kenya, altitude 6,000 feet. The actual site was a *Croton megalocarpus* tree growing on the edge of an open patch, with dense shrubbery of *Lippia*, *Aspilia*, etc. There were patches of more open ground, dominated by *Themeda triandra* and *Lippia* about a quarter of a mile away, but no true open grassland or savanna for about a mile. The biotope was not, therefore, what one expects of this species.

The nest was built near the top of the tree and was a solid structure of sticks, about 15 inches across and 6 inches deep, with a deep cup, which made it impossible to see the eggs from a neighbouring tree. It was not lined with green branches, but there was much down adhering to the nest edge. On 28th September, the female was incubating from 10.20 to 11.10, when I disturbed her to permit definite identification. The female was again incubating on 5th October and on 6th October, the male went to the nest and would have incubated had I not been in the top of a nearby tree not more than twenty feet away. There appeared no doubt that there were eggs in the nest, and that both sexes incubate. However, by 13th October, incubation appeared to have ceased without hatching any young. The nest was observed by an African observer on 14th and 15th October, but though both birds visited the nest tree, they did not incubate, or feed young. One bird, the female, was seen in the area on 28th October, 1st and 6th November, but disappeared thereafter. This disappearance coincided with the onset of heavy rain.

Both birds of this pair were of the slate-grey melanistic phase, which is said to be uncommon (Mackworth-Praed and Grant, 1953). They were very tame and confiding, and allowed good views at very close range (too close to focus 8 × 30 binoculars). Unfortunately, neither they nor the nest could be photographed from the tree close to the nest tree because of intervening foliage. The field characters distinguishing this species from the melanisitic phase of *Melierax gabar* (orange-yellow, not red legs, distinct broad pale and dark bars on the tail, and white spots on the shafts of the tail feathers only) were repeatedly checked at close range. The behaviour of the birds was also quite unlike *Melierax gabar*, which is a familiar and common species in the drier part of Kenya.

Attention was first attracted to the nest by the calls, a rather melodious high-pitched whistle "whit-wheeet-wheeet" repeated often at intervals, with variations, sometimes running into a longer series of whistles but always ending with the two long "wheet-wheets". The birds called whenever I approached, when attacking other raptors, and to each other when perched. They allowed close approach and were not at all shy, behaviour very unlike that of both the Gabar Goshawk and the African Goshawk *Accipiter tachiro*, about six pairs of which breed in the same small forest reserve. The Ovampo Sparrowhawks perched frequently on open branches, not in cover. If any other raptor such as a Long-crested Eagle *Lophaetus occipitalis*, Augur Buzzard *Buteo rufofuscus*, or African Goshawk passed the nest, it was at once attacked, the Ovampo Sparrowhawk following it up for about 200 yards from the nest site before abandoning the chase. In flight the Ovampo Sparrowhawks were light, quick and graceful, darting about continually and seldom pursuing a straight course with steady wingflaps, as would be typical of most *Accipiter* spp. They were, in fact, very unlike any other *Accipiter* I have ever seen in their boldness in the open, and light graceful flight, resembling more that of a small insectivorous falcon than an *Accipiter*.

Although the eggs were not actually seen, as I deliberately avoided climbing the nest tree in order to reduce disturbance, there appears no doubt that this pair did attempt to breed, but failed to rear young. The nest has been kept under observation at intervals since, but the birds have not re-appeared, and it has not been repaired up to 1st August, 1969. I can find no definite records of breeding in Kenya, nor, for that matter, in other East African territories. The species appears to breed most often in southern African savannas, but even there it has not been studied in detail. Conceivably it is a migrant to East Africa.

(b) *Apaloderma narina*. Narina's Trogon.

Although it is a common and comparatively easily observed inhabitant of African forests, from sea-level to 11,000 feet (*Hypericum* forests, Ethiopia), there are few breeding records of the Narina Trogon in Africa. A single record from Rhodesia has been repeatedly quoted in several handbooks, and the Percy Fitzpatrick Institute of Field Ornithology at Capetown has a total of five nest record cards, one of which was the subject of a record by Benson and Pitman (1959). In Kenya van Someren (1958) mentions a nest near Nyeri, in a stump five feet above ground, with two young, fed both by parents, and used again, only to be destroyed by ants; however, he gives no date for this record. In some areas this is a common bird, and ten or twenty may be seen in a day, often several together. It is therefore the more remarkable that its nest should so seldom have been found.

Narina Trogons appear to remain in the forests they inhabit all the year round. They perhaps undertake some local movement in East African mountain forests up and down the slope, according to the rains, coming lower in wet weather. As soon as rain is imminent or has fallen the birds normally draw attention to their hitherto undetected presence by calling. The male bird calls in a series of paired cooing notes, "ruk-roooo, roo-koook, rooo-koook, roo-kook", etc., each series lasting about seven seconds, and uttered at intervals of about 20 seconds. This call, which is apparently an advertisement display call, is usually uttered from a conspicuous perch on an open branch below the canopy, from 20–60 feet up. When calling, the head is inclined upwards, the calls are emitted with a noticeable jerking effort, and a throat patch shows metallic blue-green. If watched for some time the calling male moves from perch to perch, apparently within a defined area. Males may regularly be found calling, season after season, in the same parts of a forest. Several males may sometimes call together from trees close to one another, but whether this is territorial boundary repulsion, or a form of communal display, is not clear.

Such calling males apparently attract females, and more than one may accompany a displaying male. One male watched on 27th March, 1969 in Ololua forest, Karen, in an area where a nest had been found the previous year, had two, probably three females with him. These were not feeding, but made short flights from branch to branch near the calling male. On two occasions females perched near the male, beak pointed skyward and gaping wide, wings drooped, and with the red feathers of *one* side of the breast fluffed out towards the calling male, in what appeared to be an attitude of solicitation. No copulation took place, however. When not uttering his full display call the male may utter a rapid low guttural "rook-rook-rook-rook-rook" which helps to locate his position. Females utter, rarely, a low crooning trill "trrrroom".

Pre-copulation display by the male in this species has been seen in *Podocarpus* forest near Lake Langanno, Ethiopia, on 10th March, 1968, and also in Ololua forest, Karen. In the former case several males were calling constantly round a small clearing. One was perched on a low branch, uttering the display call. A female was perched on a bare branch about thirty feet from him, in full sunlight. The male flew over to her in a slow curving flight, wings fluttering rapidly through a short arc, like those of a moth, and exposing a blaze of partly erected bright red feathers on his underside. He landed directly on the female's back and copulated, using his wings to maintain position and working his tail from side to side. The female did not adopt the attitude of solicitation described above. The fact that several males were calling in this same small area suggests the possibility of some sort of display ground to which females are attracted; equally it is clear that widely separated single males can attract more than one female.

A calling male trogon was observed in one particular area of the Ololua forest at Karen on a number of occasions between 21st April and 5th May, 1968, when I was watching a nest of *Lophaetus occipitalis*. It appeared likely that the birds were breeding, though they were very circumspect, and were not seen to visit any hole. Eventually, on 5th May, 1968, by dint of climbing to all possible holes in what appeared the most likely area, the nest was located. It was in a hole, about ten feet above ground on the underside of a slanting limb of a *Maba abyssinica* tree, apparently where a limb had broken off long ago. The hole was about eight inches deep and five inches wide, and contained two large, well-feathered young nearly ready to fly. They emitted a hissing sound when I first looked into the hole, but ceased when I picked one up to examine it.

The young had the crown bronzy-green, separated by a black collar from bronze-green, partly glossy back. Wings above dark bottle green, wing coverts and secondaries tipped white, forming white spots. Upper tail coverts bronzy green, tail feathers only about half inch long, though the body was feathered. Underside mainly brown, but dull white on belly near feet and legs. Bill dull white. Legs black, eye dark. Inside the hole the bronzy green colour appeared brown, and the green was only noticeable when a young one was taken out into the sun.

These young would probably have hatched about mid-April from eggs laid towards the end of March. The long rains of 1968 broke very early at

Karen, and trogons would have been active and calling shortly after the beginning of March (as they were in Ethiopia at that time). The onset of rains apparently stimulates breeding activity and eggs are perhaps laid in the early rains.

Both sexes were seen to approach this nest with food while I was in the vicinity, the male on one occasion bringing a butterfly, perching full in the open just after I had located the nest. The site was thereafter kept under regular observation at intervals. However, no activity was observed in the short rains of 1968 (late October-November), nor in the long rains of 1969, which were a partial failure, with no rain in April after an abnormally early start in February. On 18th March, 1969, I examined the hole again, and found three eggs, with a trogon's feather. These were addled and deserted, but may have been laid in February, when I was in Ethiopia, in response to the abnormal early rains, and deserted when the rains later failed. On 22nd March, having ascertained that there were no other trogon's eggs in the National Museum, I took the clutch. There was no nest material in the hole, but since 18th March a few fruits of *Croton megalocarpus* had been brought in, probably by some such animal as a Dormouse *Graphiurus murinus*, or Bush Squirrel *Paraxerus ochraceus*, both common here. The trogons were not in evidence, though the calling male with three attendant females was seen ten days later in the same area. The eggs were white, slightly glossy, rather rounded ovals, about 27 × 23, 28.5 × 23, and 28.5 × 23.5 mm. These measurements correspond with other recorded measurements for this species, and there can be little doubt that they were trogon's eggs. There has been no further activity at the site, up to 1st August, 1969.

These two records are the first fully detailed breeding records for this species in Kenya, or for that matter, in East Africa, since van Someren (1958) gave no dates. From the scattered observations given it appears likely that Narina Trogons breed in the rains, egg-laying being preceded by advertisement display by the male or several males together. The same nesting hole is probably occupied often (see also van Someren, 1958), as in other trogons, and a favoured breeding area may be frequented for a number of years by a succession of different birds. Close observation of such favoured breeding localities should reveal further details of the Narina Trogon's breeding habits.

(c) *Neocossyphus rufus*. Red-tailed Ant Thrush.

A nest of this species was found in the Arabuko-Sokoke forest near Malindi, Kenya, on 15th April, 1969. It was about ten yards from a track passing through an area of mixed *Afzelia-Brachystegia* forest with dense undergrowth. It was placed in the top of a broken-off hardwood stump about five feet above ground, and was found because I suspected that a Narina Trogon seen in the area might have laid in this stump. In the jagged hollow, which was about six inches across, a slight pad of tendrils and fine plant fibres had been constructed, about four and a half inches across and half inch in depth, with a shallow cup and no marked rim. There were also a few dead leaves and some rodent fur in the structure, the latter apparently an owl's casting. The nest did little more than smooth out the irregularities in the top of the stump, but was tightly matted together.

It contained two eggs on 15th April, 1969. These were about the size of eggs of the Olive Thrush *Turdus olivaceus*, and were typical thrush-like elongated ovals. The ground colour was completely obscured by rich red-brown spots and blotches, coalescing into a deep red-brown cap at the broad end. It appeared possible that the eggs were erythristic, as no trace of blue or green was visible; the general colour effect was of the egg of a Peregrine Falcon *Falco peregrinus*. The shells were slightly glossy and the eggs appeared well-incubated, probably laid in early April. I had no means of measuring them at the time, and when I returned on 18th April, equipped with a rule, they were gone.

On 15th April I was able to observe and identify the birds at close range. On my first approach the bird slipped off unobserved, but remained in the vicinity, and was seen perching on bushes, evidently anxious to return. One of the pair uttered a sharp rasping "treeet", while the other gave a thin, high-pitched whistle "tseeem" resembling some anxiety calls of the Blackbird *Turdus merula*. One also uttered a short mellow whistled song-phrase. The sitting bird returned and on my second cautious approach was seen incubating in the top of the stump. It allowed me to walk past on the track ten yards away without moving, but left as soon as I entered the forest to confirm its identity. It again returned when I was out of sight, and on this third occasion was left sitting tight.

The eggs of this species do not appear to have been fully described. Mackworth-Praed and Grant (1953) do not give a full description of the nesting of this species, but mention that it nests in a hole in a tree, and they describe the eggs as pale greenish white, freckled with red-brown, rather unlike those seen by me; they give measurements only of an oviduct egg. There are no eggs of this species in the National Museum, Nairobi. Jackson and Sclater (1938) do not mention it at all, apparently because Sir Frederick Jackson's notes on the species were lost (Pitman; pers. comm.). Other authorities whom I have consulted do not know of any definite records of breeding (Pitman; Moreau; Forbes-Watson; J. G. Williams; pers. comm.). It therefore seems possible that this record may not only be the first breeding record for Kenya, but the first definitely identified nest of this species ever seen.

References:

Benson, C. W. & Pitman, C. R. S. 1959. Further breeding records from Northern Rhodesia. Part III. *Bull. Brit. Orn. Cl.* 79: 18-22.

Jackson, F. J. & Sclater, W. L., 1938. *Birds of Kenya Colony and Uganda Protectorate.* London: Gurney and Jackson.

Mackworth-Praed, C. W. & Grant, C. H. B., 1955. *Birds of Eastern and North Eastern Africa.* Volume II. London: Longmans, Green.

van Someren, V. D., 1958. *A bird watcher in Kenya.* Edinburgh: Oliver and Boyd.

The extinct Musk Duck *(Biziura)* of New Zealand: a re-appraisal of *B. lautouri*

by C. J. O. Harrison and C. A. Walker

Received 1st October, 1969

INTRODUCTION

The Musk Duck, *Biziura lobata* (Shaw), 1796, occurs at present only in southern parts of Australia.

Forbes, in a preliminary notice (1892 : 188), mentioned a fossil bird species from New Zealand as *Biziura lautouri* sp. nov. He gave no description or illustration—indeed, he did not even state which bone or bones were represented—and he mentioned no more precise locality. The binomen *B. lautouri* was clearly a *nomen nudum*.

A year or two later the Forbes Collection passed into the possession of the British Museum (Natural History). The Musk Duck material comprised only one right tarsometatarsus; this was registered in the Bird Section of the Department of Zoology under the number 1894.5.1.29, together with other bones from the Forbes Collection, and was labelled (it is not known when, or by whom) as "*Biziura lobata*, type, South Isld., N. Zealand". This is obviously an error, for the specimen is not the type of *B. lobata*, but it would have been the type of *B. lautouri* if the latter had been an available specific name. Later the bone passed to the Department of Geology (now Palaeontology), where it was re-registered in 1921 under the number A.1504 and labelled as *B. lobata*, of Pleistocene age, from the South Island.

Dawson apparently examined the specimen in London in recent years. (At that time there were no *B. lobata* bones in the B.M.(N.H.) collection.) In 1958 (p. 235) he wrote: "The occurrence of a species of musk duck, *Biziura lautouri*, proposed by Forbes, has been verified by the examination of the type material which differs only in size from the present-day Australian Musk Duck *B. lobata* (Shaw, 1796), and by the finding of similar tarsometatarsi at the Lake Grassmere site in 1951 (Dawson, 1952)." His final remark indicates that he too considered the "type" of *B. lautouri* to be a tarsometatarsus, presumably the specimen mentioned above. Although Dawson (1952) mentioned the Lake Grassmere site, no reference to any species of *Biziura* was made in that paper.

Scarlett (1969), in describing some new material, stated that " . . . the specimen, or specimens, mentioned by Forbes have disappeared, although it or they are possibly among the Forbes material in the British Museum of Natural History"; but did not pursue the matter further. He writes that the unknown locality at which Forbes' specimen was found is presumably Enfield Swamp, but gives no further data to support this. He also writes that there is a partial skeleton of a Recent male *Biziura lobata* from Australia in the Canterbury Museum (no. AV 7,116) which is labelled in Forbes' handwriting and, therefore, was presumably at Forbes' disposal for comparative purposes. Scarlett then describes and figures two new Musk Duck bones from New Zealand—a right humerus from Lake Grassmere (South Island) and a right tibiotarsus from Hawkes Bay (North Island), both of which he considers to belong to the living Australian species *B. lobata*. A right humerus from Hawkes Bay is also figured but is not mentioned in Scarlett's text. In view of the uncertainty as to whether the material on which Forbes' *B. lautouri* was based justified the recognition of an earlier species it was re-examined and we have now compared Forbes' "type" of *Biziura lautouri* with *B. lobata* material. The only osteological material of that species now in the B.M.(N.H.) collection comprises two female skeletons and a tarsometatarsus which we removed from the study skin of an adult male (no. 1900.6.24.1).

MORPHOLOGY

The specimen is almost perfect but is slightly eroded at both ends. At the proximal end the articulating surfaces of the internal and external cotylae, the intercotylar prominence and the calcaneal ridges of the hypotarsus have all been eroded, but the tendinal canals are still evident. The shaft is undamaged and shows the muscle scars clearly. The trochleae at the distal end, especially the one for the second digit, are also worn about the articular surfaces. This erosion of prominences accounts for most of the very minor apparent differences between this specimen and the unworn tarsometatarsus of the Recent *B. lobata*. The only real differences from the Recent male lie in the shape of the scar of the flexor hallucis brevis on the posterior part of the shaft and in the presence of a depression just below the inner proximal foramen (Plate 1, Fig. 2b); both these characters, however, are also present in one of the female specimens and must therefore be regarded as subject to individual variation. Thus we agree with Dawson that the "type" of *B. lautouri* shows no diagnostic morphological features that would support the recognition of a new species.

SIZE

Dawson's use of the name *Biziura lautouri* must therefore rest on the assumption that the size difference between *B. lobata* and Forbes' specimen warrants the erection of a palaeospecies for the latter. (Forbes may well have given the name to the specimen for the same reason, but this can never be known for sure.) What comparative material of *B. lobata* was available to these workers is also unknown, except for the one specimen available to Forbes (see above).

Size comparisons are complicated by the fact that the adult male *Biziura lobata* is much bigger than the adult female; the sex of fossil bones, of course, cannot be determined with certainty. Delacour (1959) gave measurements which indicate that the mean wing length of the female of the present form was 85% that of the male, while the corresponding figure for the culmen was 79%.

The dimensions of the fossil tarsometatarsus (A.1504) and of the Recent male in the B.M.(N.H.) (1900.6.24.1) are as follows:

	A.1504	1900.6.24.1
Greatest length of bone	57.2 mm.	54.6 mm.
Greatest length of tarsometatarsus measured on skin	?	57.7 mm.
Greatest proximal width of bone	16.8 mm.	17.2 mm.
Narrowest width of shaft	5.3 mm.	5.0 mm.
Greatest distal width of bone	15.0 mm.	14.6 mm.

The lengths could not be compared directly because the ends of the fossil were eroded; it was therefore necessary to compare the distances between certain reference points (such as foramina, or uneroded concave surfaces). Taking the smaller, Recent bone as 100, a series of six longitudinal dimensions measured on the fossil bone were 102.7, 102.7, 104.4, 104.6, 105.1 and 105.3 (average 104.1). Again taking the Recent specimen as 100, the width of the shaft at its narrowest point was 106. Thus the Forbes specimen is between 4% and 6% larger than the other.

The Recent tarsometatarsus used in this comparison, however, was not taken from the biggest of the *B. lobata* skins in the B.M.(N.H.); it is also possible to make what should be a reasonably accurate comparison of the fossil specimen with the others by a process of estimation. Since, for the Recent male 1900.6.24.1, we know both the external length of the tarsometatarsus and the length of the bone itself, the former external length of the Forbes specimen may be estimated by a simple proportional calculation as having been 60.4 mm. The range of this measurement among four adult males in the B.M.(N.H.) collection is 55.2–58.8 mm. The Forbes specimen would thus be only 2.7% bigger than the biggest of these.

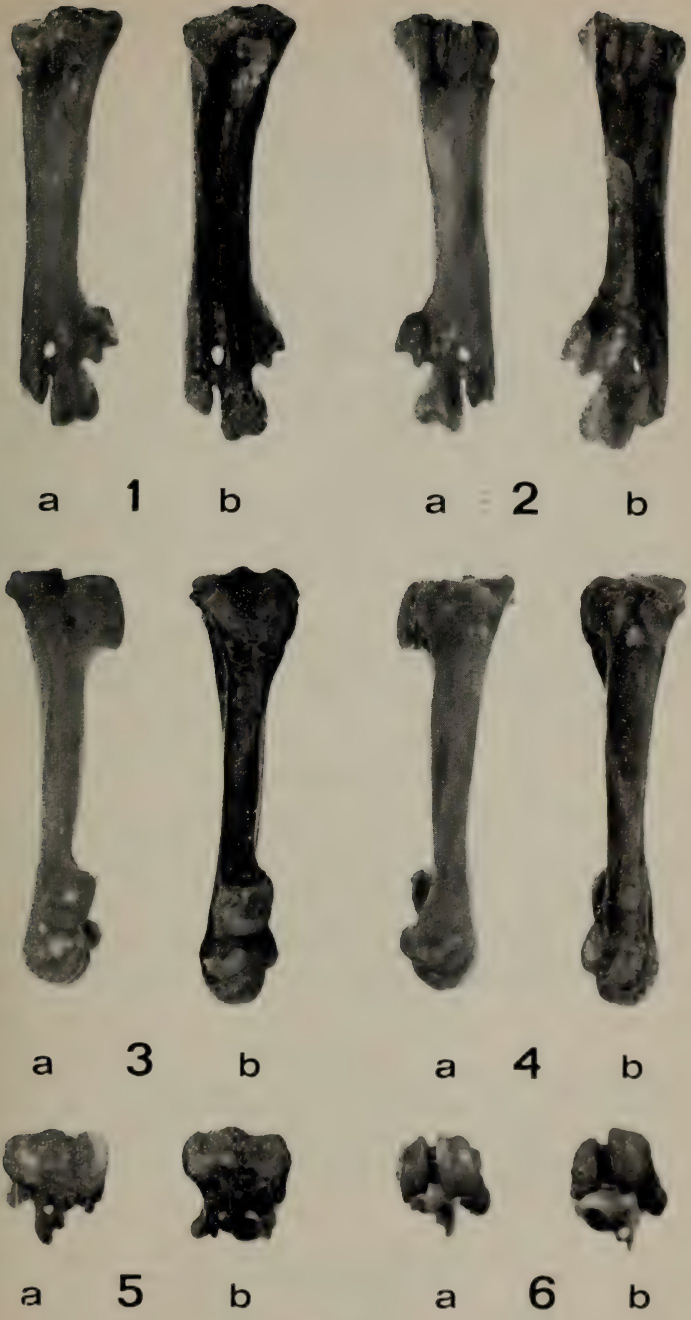

a
1
b
a
2
b
a
3
b
a
4
b
a
5
b
a
6
b

Plate 1
Comparison of tarsometatarsus of male Musk Duck, *Biziura lobata* (a) with the fossil specimen of "*Biziura lautouri*" (b). Views—1 Anterior, 2 Posterior, 3 & 4 Lateral, 5 Proximal, 6 Distal.

No information is available on the tarsometatarsi found at the Lake Grassmere site in 1951 (Dawson, 1958).

Comparative dimensions of the three New Zealand fossil Musk Duck bones figured by Scarlett may be given in terms of the corresponding measurements on the Recent male *B. lobata* from Australia in the Canterbury Museum (AV 7,116) referred to above, which, according to Scarlett, was from an exceptionally large bird. The humerus from Lake Grassmere (Canterbury Museum, no. AV 11,160) is a little larger still (102%); Scarlett concludes that that too was a male. The other figured humerus, from Hawkes Bay, is appreciably shorter (83%), though a little longer than the humeri of three more skeletons of *B. lobata* in the National Museum in Melbourne (range, 79%–82%); Scarlett states that the Melbourne specimens are probably female, and in his legend to the figure of the Hawkes Bay humerus he indicates his belief that that too is likely to be from a female ("?F."). The Hawkes Bay tibiotarsus is also small (82%) compared with the Canterbury specimen, falling within the range of the same three Melbourne specimens (76%–83%), and, according to Scarlett, probably represents yet another female.

In summary, then, we have data on four fossil bones of *Biziura* from New Zealand. Two are from the South Island; each has been compared with Recent male material of *B. lobata* from Australia (which, though large, may still be well within the size limit of the species) and each has been found to exceed it in size by no more than 2–3%. The other two are from the North Island; each is much smaller than the Recent male material from Australia used in the other comparisons but falls within, or just outside, the size range of three presumed female specimens from Australia. (A recent female specimen in the B.M.(N.H.) also falls within this size range.)

CONCLUSIONS

On the data at present available the size difference which has been used to justify the recognition of a palaeospecies of *Biziura* in New Zealand seems too slight to warrant recognition, and we would agree with Scarlett's conclusion on his specimens and recommend that all the specimens in question be regarded as evidence of the occurrence of *B. lobata* on both main islands of New Zealand at an earlier period. The large size of the two specimens from South Island indicates that they must have been males.

SUMMARY

The authors know of four isolated fossil bones from New Zealand which may be referred to the genus *Biziura* (Musk Ducks). None of these four can be separated from the living Australian species *B. lobata* on grounds of either form or size; previous attempts to do this cannot be justified.

References:

Dawson, E. W. 1952. Subfossil *Nestor* (Psittacidae) from New Zealand. *Emu* 52 : 259–272.

— 1958. Re-discoveries of the New Zealand subfossil birds named by H. O. Forbes. *Ibis* 100 : 232–237.

Delacour, J. 1959. Waterfowl of the world. vol. 3. Country Life: London.

Forbes, H. O. 1892. Preliminary notice of additions to the extinct avifauna of New Zealand. *Trans. N.Z. Inst.*, 24 : 185–189.

Scarlett, R. J. 1969. The occurrence of the Musk Duck, *Biziura lobata* (Shaw), in New Zealand. *Notornis* 16 : 57–59.

The buccal colours, weights and races of *Nectarinia bifasciata*

by R. K. Brooke

Received 14th October, 1969

There is no mention of buccal colours in sunbirds in Skead's (1967) monograph. A series of 22 specimens of *Nectarinia bifasciata* (Shaw) has been collected in riparian cover at Mazoe, Rhodesia (17° 30′ S, 30° 58′ E: 4,000 feet, a.s.l.), and are now in the National Museum of Rhodesia in Bulawayo. The dates of collection are one on 15th July, one on 28th October and 20 on 16th December. The buccal cavities were examined immediately after death preparatory to temporary plugging with cotton wool. Adult males in nuptial plumage normally have a dark brown or dark grey-brown buccal colour. One such male taken in July in fresh plumage has a yellowish underlay to the dark colour. A male in post nuptial moult in December also has this yellowish underlay. Adult females are more variable, the colour varying from off-white to pinkish grey or yellow. Juvenals of both sexes have an orange-yellow or rich yellow colour. C. W. Benson (pers. comm.) found much the same colours with the same stages in *N. sovimanga aldabrensis* (Ridgway) on Aldabra and *N. s. buchenorum* (Williams) on Cosmoledo and Astove, a species perhaps closely related to *N. bifasciata*. Other sunbirds I have collected have had quite different colours—

N. chalybea (L.): adult female orange.
N. cuprea (Shaw): adult male in nuptial plumage dark red.
N. talatala (Smith): adult female yellow-grey; immature. male yellowish pink.
N. amethystina (Shaw): adult female yellow-grey.
Anthreptes longuemarei (Lesson): adult male dark pink.

W. W. Howells (in prep. for *Ostrich*) finds that an adult male *N. cuprea* had a dusky mauve palate and a nestling had an orange palate.

If collectors of this family would always note the buccal colour of their specimens, another clue to relationships within the sunbirds would be available to workers. The significance of these colours is not certain: Verheyen (1953) says of *N. bifasciata* that it displays with its back to the female and Skead (1967) in his general account of courtship displays implies that face to face encounters between the sexes are rare.

Immediately after death all specimens were weighed with a spring balance graduated in grams. The results are—

adult males range 7–7, average (9) 7.8g;
adult females range 6–8, average (4) 7.0g;
juvenals both sexes range 6–8, average 7.3g.

Verheyen (1953) weighed the birds he took in northern Katanga between August and February. The results are—

adult males range 6.0–7.5, average (7) 6.64g;
two adult females weigh 6g. each;
one juvenal male weighs 6g.

Other weights in the literature are 7.5g. for a Zambian male (Britton & Dowsett, 1969); 6–7g. for six birds (five males) from south-western Tanzania (Meise 1937); 6.5g. each for a male and female from Tanga on the coast of

Tanzania (Sclater & Moreau, 1933). P. A. Clancey (pers comm.) has given the weights recorded in the Durban Museum of birds taken between April and July on the coastal plain of Mozambique—

adult males range 6.1–8.4g. average (17) 7.27g.
adult females range 6.5–7.6g. average (3) 6.97g.
two juvenal females weigh 6.3 and 6.6g.

It appears that the Mazoe birds are heavier than those on the coast and in northern Katanga.

Clancey (1967 and pers. comm.) considers his Mozambique sample to be a composite of *N. b. microrhyncha* (Shelley) and *N. b. strophium* (Clancey & Williams) in which the adult males may be distinguished on the tail length: under 40 mm. long in *microrhyncha*, 40 or more mm. long in *strophium*. In addition subadult or eclipse males (I have no means of deciding which) of *microrhyncha* are olive above with much yellow below, whereas in *strophium* they are grey above with the yellow below largely replaced by grey. Female *microrhyncha* have a dusky throat but otherwise they resemble their subadult or eclipse males, whereas in *strophium* the throat is pale grey and they otherwise resemble their subadult or eclipse males. On the basis of tail length most of the male Mozambique weighed birds mentioned in the preceding paragraph are *strophium* in their winter quarters, but three males weighing 7.1, 7.3 and 8.2g. are *microrhyncha*. These three fall nicely within the weight range of *strophium* and do not suggest that the two races, if discrete, have different average weights.

The Mazoe series are from a local breeding population. According to the Rhodesian Ornithological Society's nest record card collection, the breeding season as known in Rhodesia is Sept. 6, Oct. 2, Nov. 2 records. All but two of these records are from Mazoe and were made by A. N. B. Masterson and the writer. In coastal Mozambique it breeds from August (Rosa Pinto & Lamm, 1960) to November (Brooke in prep. for *Ann. Natal Mus.*). In Zambia (Benson & Irwin, 1967) it breeds from August to January with male gonad activity recorded outside that period in July and March. Verheyen (1953) thought that it had two breeding seasons in northern Katanga, July–August and February–March, but gives no details.

Clancey (1967) gives the following measurements:—

N. b. microrhyncha

a) Tanzania
adult male wings range 52–58, average (15) 55.80 mm.; tails range 35–39, average (15) 37.10 mm.
b) Mozambique
adult male wings range 54.5–58.0, average (11) 56.05 mm.; tails range 37–39, average (10) 37.80 mm.
c) both areas
adult female wings range 48–52 mm.

N. b. strophium

adult males wings range 57–62, average (29) 58.24 mm.; tails range 40–46, average (30) 41.22 mm.; adult females wings range 52–56 mm.

The Mazoe series appear to be intermediate between *strophium* and *microrhyncha*. Their measurements are—
adult males wings range 55–60, average (8) 57.7 mm.; tails range 37–42,

average (8) 40.44 mm.; adult females wings range 48–52, average (4) 50.3 mm; tails range 32.5–35, average (4) 34.0 mm.; juvenals both sexes wings range 50–55, average (9) 52.2 mm.; tails range 32–35.5, average (9) 33.23 mm.

It proved possible to separate subadult or eclipse males and adult females in the collection of the National Museum of Rhodesia in Bulawayo on the basis set out by Clancey (1967 and pers. comm.), but no geographical or migratory pattern was apparent. Set out by localities with the month of collection in brackets the results are—

N. b. microrhyncha

Zambia: Chisanse (5), Mansa (9), Musola River in Serenje (10), Mpika section of the Luangwa (9), Imusho (3), 20 miles south of Shangombo (8).
Rhodesia: Mazoe (12).
Mozambique: Maringua (6).

N. b. strophium

Zambia: Kasaba (5), Chisanse (5), Mpika section of the Luangwa (8), Petauke (3), Nashionga (3), Mwinilunga (10), Zambezi Rapids (2).
Malawi: Mbenje in Port Herald (6).
Tanzania: Luwipa River (8).
Mozambique: Bartolomeu Diaz (9), 35 miles south of the Buzi River (9), Gorongosa (9), 20 miles north of Beira (9).
Rhodesia: Msengedzi Gorge (7), Sebungwe/Zambezi Confluence (5), Mazoe (12), Holdenby (10), Sabi/Lundi Confluence (9).

It will be noted that in the breeding season birds of both forms have been collected at Mazoe in Rhodesia and the Mpika sector of the Luangwa valley in Zambia; that *strophium* occurs on the Tanzanian and Mozambique coastal plains in the breeding season; that both forms occur in May at Chisanse in Mbala (Abercorn) in northern Zambia and in the southwest of the Barotse Province in March.

A female from the Musola River placed in *microrhyncha* on the colour of the underparts has the back nearly as grey as in *strophium*. As regards the yellow below it should be noted that as in most sunbirds it fades or wears rapidly and is only a useful character in series strictly comparable in moult cycle. Far more work needs to be done on the moults and plumages of this species, including determination of whether an eclipse plumage occurs in any, some or all males. Alleged eclipse plumage is never the same in any two males examined and suggests rather a slow moult with pauses from juvenal to adult male (nuptial) plumage.

I conclude that *strophium* is a phase of *microrhyncha* occuring chiefly in the south and west of its range and that *microrhyncha* contains a higher level of variability in measurements and colour patterns than is usual in sunbirds other than *N. venusta* Shaw & Nodder.

That Rhodesian birds spend the early winter on the coastal plain of Mozambique as Clancey (1967) says is possible but has not been proved by ringing. They have returned to their breeding grounds by 14th July when a male in rather fresh nuptial plumage was collected at Mazoe and two other such males were seen.

The first male taken at Mazoe on 26th October had a crimson breast band like that of *N. shelleyi* (Alexander), not purple at all but rather like that described for the nominate race by Clancey & Williams (1957). It did not resemble any other male in colour in the extensive series in the National Museum of Rhodesia in Bulawayo. It was therefore decided to collect a series to see if this was an individual variant or typical of the Mazoe population. Eight more males in partial or complete nuptial plumage have been obtained at Mazoe and all have the normal purple breast band. The main series was taken while feeding at a large flowering *Mimusops zeyheri*, a forest tree growing on the banks of the Tatagura River at its junction with the Mazoe River, and one was taken at a Zimbabwe Creeper *Podranea brycei* a few yards down stream on the Mazoe River.

I am obliged to Mr. M. P. Stuart Irwin for criticizing the draft of this paper and for facilities for study in the National Museum, Balawayo. P. A. Clancey kindly lent selected specimens from the Durban Museum.

References:

Benson, C. W. & Irwin, M. P. S. 1967. A contribution to the ornithology of Zambia. *Zambia Mus. Pap.* 1: 1–391.
Britton, P. L. & Dowsett, R. J. 1969. More bird weights from Zambia. *Ostrich* 40(2): 55–60.
Clancey, P. A. 1967. Critical comments on the subspecies of some birds from Zambia. *Durban Mus. Novit.* 8(9): 77–107.
Clancey, P. A. & Williams, J. G. 1957. The systematics of the Little Purple-banded Sunbird Cinnyris bifasciatus (Shaw), with notes on its allies. *Durban Mus. Novit.* 5(3): 27–41.
Irwin, M. P. S. & Benson, C. W. 1967. Notes on the birds of Zambia; Part III. *Arnoldia* (*Rhodesia*) 3(4).
Meise, W. 1937. Zur vogelwelt des Matengo-hochlandes nahe dem nordende des Njassasees. *Mitteil. Zool. Mus. Berlin* 22(1): 86–160.
Rosa Pinto, A. A. da & Lamm, D. W. 1960. Contribution to the study of the ornithology of Sul do Save (Mozambique); Part IV. *Mem. Mus. Dr. A. de Castro* 5: 69–126.
Sclater, W. L. & Moreau, R. E. 1933. Taxonic and field notes on some birds of north-eastern Tanganyika Territory, Part IV. *Ibis* 13(3): 187–219.
Skead, C. J. 1967. *The sunbirds of southern Africa also the sugar-birds, the white-eyes and the Spotted Creeper.* A. A. Balkema, Cape Town.
Verheyen, R. 1953. *Exploration du Parc National de l'Upemba* 19. Inst. Parcs Nat. Congo Belge, Brussels.

A European Roller *Coracias garrulus* in the Seychelles

by H. H. Beamish

Received 14th November, 1969

On 14th November, 1968, at 11.40 hrs., P. Loustau-Lalanne and I observed a roller on the football field at Grand Anse village, Praslin Island, Seychelles. We saw the bird at irregular intervals during the two following days, and were informed that it remained in the village for a further week. It spent most of its time sitting on one or other of the goalposts. Occasionally it would fly around the field attempting to settle on a coconut palm, but every time it did so and revealed the bright blue in the wings, it was immediately mobbed by other birds. The most persistent mobbers were Fairy Terns *Gygis alba*, which chased it with loud squawks whenever it took to the air. Sometimes the Fairy Terns were joined by Noddies *Anous stolidus*, and once by a couple of Seychelles Bulbuls *Hypsipetes crassirostris*. It did not seem concerned by the approach of human beings, allowing gaping children, who had never seen such a bird before, within ten feet before flying off.

I filmed the bird while it was perched on one of the goalposts. The film has been seen by C. W. Benson, who identified the bird as a European Roller *Coracias garrulus*. A copy of the film is now in his care in the University Museum of Zoology, Cambridge. I am grateful to him and Dr. W. R. P. Bourne for their interest in this bird.

Nobody whom Loustau-Lalanne and I questioned had ever previously seen a roller on Praslin or anywhere else in the Seychelles. Nevertheless there are three earlier records of the European Roller from islands in the western Indian Ocean. Benson & Penny (in press) give two from the Seychelles, from Desert Island (presumably Ile Aride) for October, 1904, and one from Aldabra for March 1968.

There had been no unusual weather prior to the arrival of the bird on Praslin, to account for its occurrence.

Reference:

Benson, C. W. & Penny, M. J. In press. The land birds of Aldabra. *Phil. Trans. Roy. Soc.* B.

The crop of the Chaffinch *Fringilla coelebs*

by C. J. O. Harrison

Received 10*th November*, 1969

One of the ways in which the chaffinch *Fringilla coelebs*, together with other species of *Fringilla*, is said to differ from the cardueline finches that constitute the remainder of the Fringillidae is in lacking a crop (Mayr *et al.* 1956: Vaurie, 1964). In the cardueline finches the oesophagus, in the region between the throat and the base of the neck, is elastic and distensible, and can be expanded to temporarily hold food which later passes down for digestion. There is no specialised crop structure of the type found, for example, in the pigeons, Columbidae. Ziswiler (1967) referred to this elongated distensible region of the alimentary canal as a "Spindelkropfe" as opposed to a "Sackkropf". Newton (1967), in order to avoid implications of the existence of a more specialised structure, used the term "gullet". During distension the expansion of this part of the oesophagus is limited by the presence of other structures of the neck and the stored mass appears as a pair of lobes, one on each side of the neck but usually markedly asymmetrical. Fisher and Dater (1961), finding expanded structures in the Redpoll *Acanthis flammea*, a typical cardueline finch, described them as "esophageal diverticula", a term which is unsatisfactory since it implies a specialised blind-ended structure which is not actually present.

Whereas young cardueline finches are normally fed on regurgitated seeds, the young Chaffinch is fed mainly on soft-bodied insects, and Newton (1967) comments that the nestlings do not normally retain food in the gullet. After having been asked to note what had occurred, two aviculturists (*pers. comm.*) who had occasion to hand-rear nestling chaffinches and who found it necessary to use a more solid food instead of insects, reported that the young showed a typical storage of food in the neck region just after being fed; this storage appearing as a bilobed structure apparently indistinguishable from that of nestling cardueline finches, the structure being clearly apparent through the thin transparent skin of the young bird.

When Newton (1967 and *pers. comm.*) investigated the food stored in the gullet of live finches, having discovered that it was often possible to see the contents through the thin neck skin, he found a considerable amount of food retained in the oesophageal region of adult chaffinches taken at a roost. The appearance and manner of storage was again indistinguishable from that occurring in typical cardueline finches.

It would therefore appear that the Chaffinch, and probably the other species of the genus *Fringilla*, possess the typical distensible oesophageal region of the alimentary canal which also occurs in the cardueline finches and which functions as a crop. The apparent differences which seem to have misled earlier observers may have been due to the fact that this means of food retention is not used to the same extent. So that the young Chaffinch, fed with only a few insects at a time, will not store food like a young cardueline finch fed on a regurgitated mass of seeds; and it is only when the adult is feeding mainly on seeds and takes in a large quantity prior to roosting in cold weather that the use of the distended oesophagus become apparent. The difference would appear to be not one of morphology but of adaptive evolution of feeding method.

References:
Fisher, H. I. & Dater, E. E. 1961. Esophageal Diverticula in the Redpoll *Acanthis flammea*. *Auk*. 78: 528–531.
Mayr, E., Andrews, R. J. & Hinde, R. A. 1956. Die systematische Stellung der gattung *Frillinga*. *J. Orn.* 97: 258–273.
Newton, I. 1967. Adaptive radiation and feeding ecology of some British Finches. *Ibis* 109: 33–98.
Vaurie, C. 1964. Article 'Finches' in A. L. Thomson, *Ed.*, *New Dictionary of Birds*: 292.
Ziswiler, V. 1967. Der Verdauungstrakt Körnerfressender Singvögel als taxonomischer Merkmals-Komplex. *Mitg. Gen., Schweiz. Zool. Gessellsch., Bazel*, 1967: 620–627.

The mouth markings of juvenal *Vidua regia* and *Uraeginthus granatinus*

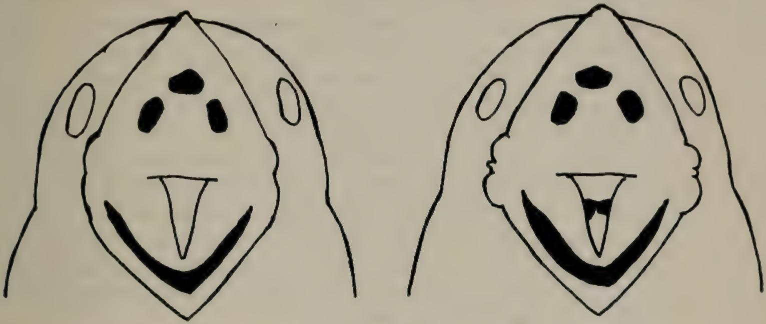
by R. B. Payne

Received 24th November, 1969

The mouth markings of most young parasitic viduine finches resemble closely the mouth markings of the young of their estrildid hosts (Neunzig, 1929; Friedmann, 1960; Nicolai, 1964; Payne, 1967). In the three species groups or subgenera of viduines where the mouth markings have been adequately described in one or more species (the groups *Vidua*, "*Hypochera*", and "*Steganura*") each species of parasite usually mimics in great detail the mouth markings of its most common estrildid host species. Viduines of the subgenus "*Tetraenura*" are not as well known. Neunzig (1929) has described the mouth markings of the Straw-tailed Whydah, *V. fischeri*, as being generally similar to the mouth markings of its presumptive host, *Uraeginthus ianthinogaster*, with the exception of the greater extent of a U-shaped black mark on the lower mandible and the presence of two small spots on the posterior portion of the palate in the host. The two species are alike in having three large black spots on the anterior portion of the palate and in the configuration of the gape tubercules at the corner of the mouth in the nestling. As noted by Friedmann (1960) the source of Neunzig's material of *V. fischeri* is unknown, and no museum specimens of young *V. fischeri* which might show the pattern are known. Mouth markings of the other species in the "*Tetraenura*" group, the Shaft-tailed Whydah, *V. regia*, have not earlier been described.

Evidence for host specificity of these two viduines is most clear in the vocal mimicry of the singing males. Nicolai (1964) recorded captive *V. fischeri* to mimic the vocalizations of *U. ianthinogaster* and *V. regia* to mimic *U. granatinus*, and I have heard and tape-recorded this vocal mimicry in the field in Kenya and in the Transvaal. Each male within a species appears to mimic the corresponding single species of estrildid host. In addition all known young *V. regia* which have been attended by a foster parent have been associated with *U. granatinus* (Friedmann, 1960).

During the course of field work with the viduines in southern Africa, I collected three juvenal *V. regia*; the skins are now in the collection of the University of Oklahoma. One of these birds (RBP 4355) was taken alone in a tree at the Lowveld Fisheries Research Station (25° 00′ S, 29° 19′ E), near Marble Hall, Transvaal, on 22nd January, 1967. This bird, a male, was in full juvenal plumage and had a bill mostly orange but still gray at the tip; the feet were wine-brown. Mouth markings consisted of three large black spots on the upper palate and a black U-shape near the periphery of the lower mandible. The tongue was unmarked. The gape tubercules of the bird were nearly resorbed and the only detail visible was the occurrence of a whitish swelling at the base of the upper jaw on each side and another whitish swelling at the base of the lower mandible. A slightly younger female (4640) by itself drinking at a pool along the Maun-Sehitwa road a few miles from Lake Ngami, Botswana, had the bill all dark gray except at the base, which had turned orange. A third specimen (4641) was taken a few miles away on the same day (23rd April, 1967). This bird, a male, had begun the post juvenal molt and had completed the development of orange in the bill, the feet were light brown, and the skull was 10 per cent pneumatized. Both of the Ngamiland *V. regia* had the same pattern of mouth markings as the Transvaal bird; spots were notably paler in the male in post juvenal molt.



Mouth markings of juvenal *V. regia* (left) and *U. granatinus* (right).

A series of three adult male and ten adult female *V. regia* showed a similar pattern of three grayish spots on the roof of the mouth in the same pattern as in the juveniles, though in the older birds the spots were less distinct and in some they were not visible.

The pattern of mouth markings of *V. regia* is quite similar to that of its song model and apparent host, *U. granatinus*. Steiner (1960) described the nestlings of this estrildid as having three large spots on the anterior portion of the palate, two smaller spots behind them, and a V-shaped mark on the lower mandible; the tongue had a black mark. Three juvenal *U. granatinus* (4658, 4659, 4660) that I collected on 24th April, 1967, at Bushman Pits (20° 08′ S, 24° 20′ E), Botswana, showed no evidence of the two posterior spots on the palate but otherwise resembled the description of Steiner. In all of the young the purplish feathers of the adult plumage had begun to replace the brownish juvenal feathers on the side of the face; the bird with the fewest had begun to grow two purplish feathers probably replacing a few accidently lost juvenal feathers, while the other birds were quite purple on the face. Nicolai (1968) found this very early molt of the face to occur in young *U. granatinus* by about five weeks of age when the gape tubercules are just visible; thus the young Violet-eared Waxbills at Bushman Pits had been out of the nest for two or more weeks and had perhaps lost the posterior palate marks. Similarly any posterior marks may have faded in the independent young parasitic *V. regia* by the time of collection.

A note on the behaviour of *U. granatinus* is of interest in relating the aviary studies of mate selection to the mating systems of this species in the field. Nicolai (1968) believes the early facial molt of *U. granatinus* to be associated with precocious mate selection; birds may form permanent pairs by the age of five weeks although they do not breed until some weeks later. Such early pair formation suggests inbreeding within brothers and sisters because young waxbills of this age are still in family groups attended by their parents and siblings. The young grassfinches at Bushman Pits were feeding themselves and no vocal begging was heard; thus they were independent. At least two family groups were involved in the field observations inasmuch as I flushed two adult males from the flock into the same acacia bush and at least ten birds were in the group. Hence, the young birds do not necessarily mate with their siblings in the field in natural conditions since several family groups of *U. granatinus* may come together into larger flocks where early pair formation could then involve unrelated young waxbills.

The two species of finches are very similar in the pattern of mouth markings in the juveniles; the resemblance of *V. regia* to *U. granatinus* in markings as well as in color and pattern of the juvenal plumage is clearly an instance of mimicry of visual signals of the host by its brood parasite.

I am grateful to J. M. Winterbottom of the FitzPatrick Institute and to R. H. N. Smithers and M. P. S. Irwin of the National Museums of Rhodesia for their helpful suggestions during the field work, which was supported by the National Science Foundation.

References:

Friedmann, H. 1960. The parasitic weaverbirds. *U.S. National Museum Bull.* 223.

Neunzig, R. 1929. Zum Brutparasitismus der Viduinen. *Jnl. Orn.* 77: 1–21.

Nicolai, J. 1964. Der Brutparasitismus der Viduinae als ethologisches Problem. *Z. Tierpsychol.* 21: 129–204.

Nicolai, J. 1968. Die isolierte Frühmauser der Farbmerkmale des Kopfgefieders bei *Uraeginthus granatinus* (L.) und *U. ianthinogaster* Reichw. (Estrildidae). *Z. Tierpsychol.* 25: 854–861.

Payne, R. B. 1967. Interspecific communication signals in parasitic birds. *Am. Nat.* 101: 363–376.

Steiner, H. 1960. Klassifikation der Prachtfinken, Spermestidae, auf Grund des Rachenzeichnungen ihrer Nestlinge. *Jnl. Orn.* 101: 92–112.

The Waldrapp *Geronticus eremita* (L.)

by K. D. Smith

Received 10*th November*, 1969

INTRODUCTION

Geronticus eremita, variously known as the Red-cheeked, Hermit or Bald Ibis, or Waldrapp, and closely related to the Bald Ibis *G. calva* of South Africa, is an uncommon species with two widely separated breeding populations in the western Palaearctic Region. It was known to the Ancient Egyptians, being figured as a hieroglyph, and as Moreau (in Meinertzhagen 1930) has pointed out, the climate in Egypt was less extreme 5,000 years ago, and parts of the country would have been thoroughly congenial for these birds. They look somewhat ungainly with an untidy plume of long pointed feathers on the nape, which waves around in the wind. The name (*eremita*= hermit) is highly inappropriate as they are eminently gregarious birds throughout the year. Nowadays they breed, usually adjacent to rivers or streams, in moderately arid areas with a low rainfall, and their diet is varied, black beetles, grasshoppers, locusts, centipedes, grubs and other insects, lizards and snails being mentioned in the literature.

The species is of special interest because of its run-down in historical times, beginning with an apparent abundance in dynastic Egypt and proceeding, through elimination of its European range, to its present restricted one. My own interest in the Waldrapp arises partly from the uncertainty surrounding its breeding range and movements outside the breeding season, and partly from having lived in an area where it breeds and in one where it winters, and the purpose of this note is to draw attention to the many gaps in our knowledge of its life-history.

I am grateful to Mr. R. E. Moreau for encouraging me to write this note, and for his comments on the original draft.

BREEDING RANGE

General

According to Vaurie (1965) the species bred formerly in Europe (Upper Rhone and Danube, Italian Alps, Switzerland and in the Jura), in environments very different from its present ones (see Géroudet, 1965). It was figured by Gessner (1555), and known there from late Pleistocene fossils. It became extinct in Europe in the sixteenth or seventeenth century, and Géroudet (1965) attributed this to perhaps an inability to tolerate disturbance, but the cause is unknown. Nowadays its only known breeding areas are in Morocco, probably in Ifni (Valverde, 1957), in Algeria (said to be rare), at Birecik on the Upper Euphrates in south-east Turkey, and perhaps in Syria (Moore & Boswell, 1956); also Archer & Godman (1937) quote Citerni who stated that "there is a known breeding colony in Syria north-east of Damascus". The species has been seen in Iraq (Allouse, 1953), but without proof of breeding.

Most authors of modern avifaunal works, including Vaurie (1965), but with the exception of Archer & Godman (1937), believe that isolated populations probably breed in the countries bordering the southern Red Sea, as relicts after the last glaciation. Meinertzhagen (1954) goes so far as to say "undoubtedly breeds in Abyssinia and perhaps Eritrea", and "there is probably a breeding colony in Yemen, not yet located", but gives no Yemen localities. Moreau (1966, and pers. comm.) favours the Yemen, and also thought that a flock of eight which he saw in May 1921 on the edge of the Egyptian desert near Giza might have been a remnant from some secluded corner of the mountains of Sinai, or the Gelalas, south-west of Suez, although in most of Egypt dessication had gone too far for the birds to survive.

Apart from there being no recorded instance of breeding in the Yemen, there does not seem to be any direct evidence that the species has ever been recorded there at all. There are no Yemen specimens in the British Museum (Mrs. B. P. Hall, *in litt.*). Wyman Bury, who spent a year there, apparently never saw any (Sclater, 1917), nor did Philby (Bates, 1937). Moreau has drawn my attention to a recent (1965) issue of Yemen postage stamps which depicts eleven species, including the Bald Ibis, but as nine of them are figured as coloured illustrations and two as sketches, in Meinertzhagen (1954), the source seems obvious, and does nor provide any proof of occurrence in the Yemen.

There is not a shred of evidence, as far as I am aware, to support the claim that the species breeds in Ethiopia (none by Heuglin, Dr. D. L. Lack, *in litt.*), and during twelve years residence in Eritrea I found it to be only a winter visitor there. But George Popov, of the Anti-Locust Research Centre, London, has informed me (*in litt.*) that in February or March, 1948 he saw a party of 5–6 ibises with dark glossy plumage perched on a cliff above a small rocky bay fringed with mangroves near Birk, on the west coast of Arabia, about 18° N. Whilst the possibility of *Plegadis falcinellus* cannot be ruled out they may have been breeding *G. eremita.*

The Asia Minor populations

Danford (see Archer & Godman, 1937) saw the flocks arriving at Birecik during the winter rains in February. Kumerloeve (1962), who visited Birecik in 1953 (530 pairs recorded), and again in 1962 (130 pairs), reported a further sharp decline (Kumerloeve, 1967) to 65 pairs in 1964, 70–75 in 1965, and only 45 in 1967; no satisfactory explanation for this decrease could be given. Often only one or two young were raised per pair.

The North African populations

In Morocco the ibises appear to arrive during the winter rains, as in Turkey, my own first records (Smith, 1965) being 10th March in 1963, and 29th February in 1964, although the exact dates of arrival are not known. They breed in colonies, sometimes in close proximity to other cliff-nesting species (see Géroudet, 1965), on precipitous cliffs in gorges in fairly arid country, or on quite small rock-faces in more fertile valleys in agricultural land, or on cliffs falling sheer into the sea. I knew of six colonies there, at four of which (two on coastal cliffs) 15–20 pairs had young (one, or two, none seen with three, but no exact figures) in most nests in early June 1963, and at another about 40 birds, including all the young, rose from the breeding ledges and flew down into adjacent fields. The adults usually left the ledges first, but soon returned to brood or feed unfledged young, and did not give the impression that they were unduly alarmed by human disturbance as suggested by Géroudet (1965).

At the well-known colony at Timhadite in the Middle Atlas there were only eight birds by early March 1963, but Bierman (1959) recorded 20–30 pairs there in April 1954, and a Cambridge University party (cyclostyled report, no author named, undated) saw 140 birds near there on 24th June, 1963, which must presumably have included all the adults and juveniles of the year. Géroudet (1965) found 15–20 pairs there in 1965, and as he points out the number of breeding pairs at each colony varies considerably from year to year, for instance at Aoulouz Lynes (1925) found 40 pairs breeding in 1924, I found only eleven pairs there in 1963, and Géroudet 20 pairs in 1965.

Heim de Balsac & Mayaud (1962) list the other known, or previously known colonies, mostly near main roads, but as much of Morocco is difficult of access except on foot, I suspect there must be colonies, perhaps large, in remote areas which have never been discovered, an opinion shared by Géroudet, who considers there must be 15 to 20 known, or previously known colonies there. The Bannermans (1953) saw ten, perhaps fifteen Waldrapps along the coastal cliffs near Cap Cantin in late February 1952, which had presumably just arrived, and which, according to local informants, normally bred there, but I saw no sign of a breeding colony between Cap Cantin and

Safi in 1963, so that it may be that they do not breed annually in the same place. Observations by Meade-Waldo (1903) and others suggest that they were once commoner in Morocco than nowadays, but they may have changed their breeding sites due to disturbance or food requirements.

Etchécopar & Hüe (1967) give the average clutch of Moroccan pairs as three, sometimes two, occasionally more. According to Brosset (1961) three or four eggs are laid in eastern Morocco but often only a single bird is raised, and the species does not breed every year, perhaps owing to the irregularity of the rains.

MIGRATION AND WINTER RANGE

The Asia Minor populations

Those ibises which winter in the countries bordering the western shores of the Red Sea may come from Birecik, though the possibility that they come from the Yemen cannot be excluded. But there are hardly any records of the birds in transit over a distance of nearly 1,000 miles between Azrac, in Jordan, and the coast of the Sudan. Bourne (1959), on the evidence of Paige who saw ibises "with red legs" at Azrac (date not specified, but November or later), expressed the opinion that these eastern populations are trans-desert migrants. Flower (Meinertzhagen, 1930) saw several hundred on the Blue Nile in the Sudan in February 1922, and Suakin is mentioned by Cave & Macdonald (1955), but the possibility exists that these may have bred in the Red Sea Hills. Meinertzhagen (1954) gives several winter records for southern Arabia (none in Yemen), and a vagrant was obtained and another seen by Archer in former British Somaliland, but most of the evidence for the winter range comes from Eritrea and Ethiopia.

Moltoni & Ruscone (1942) list various localities for Ethiopia, but there is little recent information. On 20th December, 1941, I saw a few scattered birds on the open plateau at 8,000 ft., near Addis Ababa, and on or about 20th December, 1952, a flock of about 100 some fifty miles north-east of Addis, also at a high altitude, which were feeding in dry fields. Dr. E. K. Urban (*in litt.*), who has lived in Addis for the past five years, has not met with any, but his work has been concentrated mainly in southern Ethiopia, beyond the known range of the species, which is said by Archer & Godman (1937) to be the Arussi country, about 8° N., just south of Addis.

Most of my Eritrean observations have been published (Smith, 1955), but I was then under the impression that the species was resident in north-east Africa. Between 29th January and 14th February, 1952, some 300–400 were met with on the coastal plains in the extreme north of Eritrea near the Sudan border, with some further south near Massawa, but as only a small area was surveyed many others might have been present elsewhere in the coastal zone of Eritrea and the Sudan. It was a winter of good rainfall, and they were spread out in flocks over the open, sandy, short-grass plains adjacent to the coast, and were often feeding around cattle. Two were in a village, walking about amongst the occupied huts, and others were seen perched on the tops of the coastal mangroves.

The following winter the rains failed, and the plains were mostly dry, but in mid-February 1953 several hundreds were reliably reported to be frequenting open areas of more inland Acacia which had received very local rains. In 1953–54 (good rains), the only winter when I was able to record arrival and departure, twelve arrived at Archico, just south of Massawa, on 31st December, 1953, and the numbers built up to 96 in January, 1954. They fed daily in dense stands of *Heliotropium* on the sandy flats, the prey appearing to be grasshoppers and locust hoppers, and they roosted in *Zizyphus* trees in the gardens of occupied dwellings in Archico village, taking little notice of human beings below, or when feeding during the day. They left in the first week of February, and in no year were any seen on the coast outside the period December to the end of February. Elsewhere in Eritrea a few wintered on the plateau, near Asmara, and a party of seven were seen near there on 19th April, 1953. The moderate numbers in Eritrea between 1951 and 1954 coincided with Kumerloeve's count of 530 pairs at Birecik in 1953.

The North African populations

Heim de Balsac & Mayaud (1962) state that whilst most ibises leave Morocco in August, a few occasionally remain the winter in the Middle Atlas. Some have been reported in western Morocco (Meinertzhagen, 1940), and in Algeria (Heim de Balsac & Mayaud, 1962) in November, whilst Snow (1952) was informed by forest guards that "they come to feed around the lake of Dayet Achleff (Middle Atlas) in winter, leaving in March". But there seems to be no certain evidence that any have been recorded in Morocco in December and January; I saw none between September and February in two years there.

One was obtained from a flock at Fort Trinquet (lat. 25° N.) in north Mauritania in February (Dekeyser & Villiers, 1951), and Dr. Th. Monod has kindly informed me (*in litt.*) that on 8th February, 1960, he saw a party of 20 perched in Acacia near Aratane Wells (about 18° N.) in extreme desert known as le Djouf, in southern Mauritania, which is the only record south of the Tropic of Cancer. They settled back on the trees soon after being disturbed, but it is not thought that they wintered in the area. Valverde (1957) lists a few records (presumably transit) for Spanish West Africa, at Smara (26° N.) in August, 1952 and 1954, and in spring 1953, at Villa Cisneros (23° N.) in October, 1954, and at Tuisguerrentz (reported as common). Vagrants have been recorded in the Azores in February, in the Cape Verdes in January (Bannerman & Bannerman, 1966–68), in Tunisia (Whitaker, 1905), and in Spain in July (Valverde, 1959). Moreau (*in litt.*) considers that it is not surprising that the winter quarters have not been discovered, considering the vastness and remoteness of much of northern west tropical Africa, especially as only comparatively small numbers of birds are involved, and that a likely area seems to be the northern edge of the Niger Inundation Zone, in Mali, where they could find food in a region which is otherwise dry in winter. But they may range widely over parts of the western Sahara owing to their varied diet.

CONCLUSIONS

It would be unwise to deny the existence of breeding colonies in countries which have been so incompletely covered by ornithologists as Ethiopia and the Yemen, or even the remoter parts of Eritrea and the Red Sea Hills of the Sudan, but there is no evidence as yet that there are any. It seems a fair assumption that the birds which winter in north-east Africa come from Asia Minor, but this has not been proved, and there are no transit records south of Jordan. Does the species breed in the Yemen, and if so, where do these birds winter? Moreau believes this to be in Eritrea, but as the coasts of both countries lie within the winter rainbelt of the southern Red Sea there is no obvious reason why Yemen birds should leave there. But if this is so then where do the Birecik birds winter? Do they just disappear into the Arabian deserts as the Moroccan birds do in the Sahara, or do the Asia Minor and

Yemen populations (if any) both winter in north-east Africa? Where do those birds which have been seen in southern Arabia in winter breed?

Presumably food requirements dictate their winter quarters, thus by migrating from Morocco in August the birds would avoid the dry, hot autumn and early winter there in exchange for the monsoon rains along the southern edge of the Sahara, if that is where they go? Those which winter in Eritrea and the Sudan appear to arrive there at the start of the coastal winter rains in December, but this may be merely coincidental as others winter in a seasonably dry environment on the Ethiopian plateau. Birecik birds have presumably finished breeding by August, and if they are the ones which winter in north-east Africa then their whereabouts between August and December is unknown.

Both eastern and western birds have been recorded still near their breeding areas in November, and both populations return to their nest sites during the rains in late February and early March, therefore the period spent in winter quarters by some birds is less than three months, but the party of seven seen near Asmara, Eritrea, on 19th April, do not fit into this pattern, nor do those seen at Villa Cisneros, Spanish West Africa, in May, but they may have been non-breeding birds.

The total population of this elusive species may now be less than 1,000 pairs, and it could become extinct before the answers are known. But perhaps *Geronticus eremita* is a resilient species in spite of the small number of young which are raised annually. It has never been common, and does not breed annually in the same sites, or perhaps not at all in dry years. If those birds which winter in north-east Africa do come from Asia Minor, it is difficult to believe that the entire population is confined to one breeding locality, therefore there should be undiscovered colonies in remote areas in the countries flanking the eastern Mediterranean, or in north-west Africa and perhaps elsewhere. Colour ringing might provide some of the answers to these problems.

References:

Allouse, B. E. 1953. The Avifauna of Iraq. *Iraq Nat. Hist. Mus. Publ.* 3: 12.

Archer, G. & Godman, E. M. 1937. *The Birds of British Somaliland and the Gulf of Aden.* London.

Bannerman, D. & J. 1953. A second journey to the Moroccan Sahara (in 1952) and over the Great Atlas. *Ibis* 95: 128–139.

Bannerman, D. A. & W. M. 1966. *Birds of the Atlantic Islands*, 3. *A History of the birds of the Azores*. Edinburgh and London.

— 1968. *Birds of the Atlantic Islands*, 4. *History of the birds of the Cape Verde Islands*. Edinburgh and London.

Bates, G. L. 1937. Birds of Asir and parts of Hijaz and Northern Yaman collected by H. St. J. B. Philby on his 1936 journey. *Ibis* (14) 1: 786–830.

Bierman, W. H. 1959. Observations ornithologiques au Maroc. *Oiseau* 29: 4–39, 99–128, 221–244.

Bourne, W. R. P. 1959. Notes on autumn migration in the Middle East. *Ibis* 101: 170–176.

Brosset, A. 1961. Ecologie des oiseaux du Maroc oriental. *Travaux de l'Institut scientifique chérifien, Zoologie* 22.

Cave, F. O. & Macdonald, J. D. 1955. *Birds of the Sudan*. Edinburgh & London.

Dekeyser, P. L. & Villiers, A. 1951. Contribution à l'étude de la faune de la Casamance. Oiseaux. *Ministero das Colonias, Junta Invest. Colon. Lisboa.*

Etchécopar, R. D. & Hüe, F. 1967. *The Birds of North Africa*. Edinburgh and London.

Géroudet, P. 1965. Du 'Waldrapp' de Gessner aux Ibis chauves du Maroc. *Nos Oiseaux* 28 (303): 129–143.

Gessner, C. 1555. *Historiae Animalium Liber III qui est de avium natura*. Zurich.

Heim de Balsac, H. & Mayaud, N. 1962. *Les Oiseaux du nord-ouest de l'Afrique*. Paris.

Kumerloeve, H. 1962. Zur Geschichte der Waldrapp-Kolonie in Birecik am oberen Euphrat. *J. Orn.* 103: 389–398.

— 1967. Nouvelles données sur la situation de la colonie d'Ibis chevelus *Geronticus eremita* (L.) 1758, à Birecik sur l'Euphrate (Turquie). *Alauda* 35: 194–202.

Lynes, H. 1925. Ornithology of the Sous Territory of Southern Marocco. *Mém. Soc. Sc. Nat. Maroc.* 12: 1–82.

Meade-Waldo, E. G. B. 1903. Bird-Notes from Marocco and the Great Atlas. *Ibis* (8)3: 196–214.

Meinertzhagen, R. 1930. *Nicoll's Birds of Egypt*. London.

— 1940. Autumn in central Morocco. *Ibis* (14): 226–227.

— 1954. *Birds of Arabia*. Edinburgh and London.

Moltoni, E. & Ruscone, G. G. 1942. *Gli uccelli dell'Africa Orientale Italiana*, 2. Milan.

Moore, J. H. & Boswell, C. 1956. Field observations on the birds of Iraq, I. *Iraq Nat. Hist. Mus. Publ.* 9.

Sclater, W. L. 1917. The birds of Yemen, south-western Arabia, with an account of his journey thither by the collector, Mr. G. Wyman Bury. *Ibis* (10)5: 127–186.

Moreau, R. E. 1966. *The Bird Faunas of Africa and its Islands*. New York and London.

Smith, K. D. 1955. Recent records from Eritrea. *Ibis* 97: 65–80.

— 1965. On the birds of Morocco. *Ibis* 107: 493–526.

Snow, D. W. 1952. A contribution to the ornithology of North-West Africa. *Ibis* 94: 473–498.

Valverde, J. A. 1957. *Aves del Sahara Español*. Madrid.

— 1959. Cuatro interesantes especies en Andalucia. *Ardeola*, 5: 143–148.

Vaurie, C. 1965. *Birds of the Palearctic Fauna*, 2. London.

Whitaker, J. I. S. 1905. *Birds of Tunisia*, 2. London.

A Blue-winged Pitta on Christmas Island, eastern Indian Ocean

by C. W. Benson

Received 15*th November*, 1969

In the course of cataloguing the collections of birds in the University Museum of Zoology, Cambridge, I found a specimen of the Blue-winged Pitta *Pitta moluccensis* (P. L. S. Müller) collected by H. E. Durham on Christmas Island, eastern Indian Ocean, ca. 10° 30′ S., 105° 40′ E., on 14th December, 1901. There is no reason to suppose that it was mislabelled, since there are also specimens in these collections of a goshawk *Accipiter fasciatus natalis* (Lister) and a white-eye *Zosterops natalis* Lister, both endemic to Christmas Island, and collected by Durham there between 1st January and 26th February, 1902. The pitta was originally identified as *P. vigorsii* Gould, but comparison with the material in the British Museum (Natural History) has shown that it is not that species, but *P. moluccensis*. This seems to be the only record of any *Pitta* sp. from Christmas Island. The genus is not mentioned by Watson *et al.* (1963: 90–97) nor by Pearson (1966).

This Christmas Island record is in keeping with the account by Serventy (1968), according to which *P. moluccensis* is highly migratory, the Malay Peninsula being the normal southern limit of its range. However, it occasionally reaches Sumatra and off-shore islands, and Java, while there are even two records from Western Australia, which are the main subject of Serventy's note. He quotes evidence of large numbers of migrants being captured on misty nights at Fraser's Hill, Malaysia, including four individuals of *P. moluccensis* during 23rd and 24th October, 1966. This tallies with the account by C. B. Cottrell (in Benson & Irwin, 1964: 469) from Abercorn (now Mbara) Zambia, for an African species, *P. angolensis*, which is also migratory, and may well occasionally wander to islands in the western Indian Ocean, as does *P. moluccensis* to Christmas Island and even to Western Australia.

The Christmas Island specimen was not sexed. Measurements (in mm.)

are:—wing 117; tail 40; tarsus 42; culmen (exposed) 23; culmen (from base of skull) 27. Comparison with material in the British Museum indicates that it belongs to the nominate subspecies, as found by Serventy for the Western Australian specimens. It would appear that *P. b. nympha* (Temminck & Schlegel) does not migrate south of Borneo, and even there is uncommon (Smythies, 1960).

References:

Benson, C. W. & Irwin, M. P. Stuart. 1964. The migrations of the pitta of eastern Africa· *N. Rhod. Journ.* 5(5): 465–475.

Pearson, A. J. 1966. The birds of Christmas Island (Indian Ocean). *Bull. Brit. Orn. Cl.* 86: 66–71.

Serventy, D. L. 1968. Wanderings of the Blue-winged Pitta to Australia. *Bull. Brit. Orn. Cl.* 88: 160–162.

Smythies, B. E. 1960. *The Birds of Borneo.* Edinburgh: Oliver & Boyd.

Watson, G. E., Zusi, R. L. & Storer, R. E. 1963. *Preliminary field guide to the birds of the Indian Ocean.* Washington: Smithsonian Institution.

The winter quarters of *Caprimulgus europaeus plumipes* Prhevalski

by R. P. Borrett and H. D. Jackson

Received 22nd November, 1969

Vaurie (1965) points out that the winter quarters of *Caprimulgus europaeus plumipes* are unknown, and suggests that it may migrate westwards from its breeding grounds in central Asia to winter in north-eastern Africa and southern Arabia. His suggestion is based on the specimen taken on 5th October at Cape Guardafui and a few other individuals collected while on migration in Russian Turkestan and Transcapia. There has been no suggestion that *plumipes* may winter further south in Africa. White (1965) lists the Cape Guardafui specimen as the only record from the Ethiopian Region, and Clancey (1965) does not include this sub-species in his list for the South African Sub-Region.

It is now clear that *plumipes* winters in south-eastern Africa, apparently preferring the lower altitudes up to 500 m and therefore not occurring far inland. It may also winter in north-eastern Africa as suggested by Vaurie (*op. cit.*), but it seems more likely that the bird taken at Cape Guardafui on 5th October was on passage. The following five specimens collected in southern Africa substantiate the foregoing:

1. No. 50d., ex collection of F. Campbell, "Cape of Good Hope" (*sic*); no further data.
2. No. 96. 4. 17. 4., collected by Woodward at Etchowe, Zululand (=Eshowe, 28° 53′ S., 31° 28′ E., 500 m); no further data.
3. No. 68318, ♀ collected on 10th January, 1968, by R. P. Borrett at the confluence of the Sabi and Lundi rivers in Rhodesia at 21° 19′ S., 32° 25′ E., 160 m.
4. No. 68326, ♀ collected on 18th January, 1968, by R. P. Borrett near the Sabi/Lundi confluence at 21° 19′ S., 32° 24′ E., 170 m.
5. No. 67956, ♂ collected on 9th March, 1969, by R. Chenaux-Repond just below the Chivirira Falls on the Sabi River at 21° 15′ S., 32° 21′ E., 180 m.

The first two specimens are in the British Museum (Natural History) and the other three are in the National Museum, Bulawayo. We are most grateful to C. W. Benson and P. R. Colston for comparing the two January specimens with material held in the B. M. (N.H.) and confirming that they are *plumipes*, and for drawing our attention to the two African specimens of *plumipes* held there and previously misidentified as *unwini* and *europaeus* respectively.

References:

Clancey, P. A. 1965. A catalogue of the birds of the South African Sub-Region, 2. *Durban Mus. Novit.* 7(10): 343.

Vaurie, C. 1965. *The birds of the Palearctic fauna*, 2, p. 642. Witherby: London.

White, C. M. N. 1965. *A revised check list of African non-passerine birds*, p. 201. Government Printer, Lusaka.

The immature plumage of two African warblers

by P. L. Britton

Received 16*th October*, 1969

According to Mackworth-Praed & Grant (1955) the immature plumage of *Bradypterus graueri carpalis* Chapin and *Cisticola carruthersi* Ogilvie-Grant is undescribed. I have recently collected immature birds of both species in western Kenya, and these specimens are lodged in the National Museum, Nairobi. Co-ordinates of localities mentioned may be found in Britton & Harper (1969).

Bradypterus graueri carpalis

A bird with negligible skull-ossification was netted with an adult female at the edge of papyrus at Ukwala on 7th June, 1969. Another, greatly alarmed bird calling nearby was netted later and found to be an adult male. The immature is unsexed but the measurements of this specimen in Britton & Harper (*op. cit.*) suggest that it is a female.

The main difference between the immature and adult is on the underparts (see photo) where the characteristic white, arrow-marked throat and chest is cream with extensive, hardly differentiated, more dusky markings in the immature. The remainder of the underparts are dusky-brown in the immature being especially dark on the flanks, sides of breast, vent and legs, and entirely lacking the adult's white centre to breast and belly (although this area is a little paler than elsewhere). The immature's upperparts are barely darker than those of adults. The feathers of the wing shoulder have a little creamy-white edging but the slight primary and median covert edging of adults is absent. The outer webs of the secondary coverts are edged with brown and there are less obvious narrow brown tips to the median coverts. As the six adults in Britton & Harper (*op. cit.*) show a slight sexual dimorphism, with the pure white wing-shoulder feathers of males largely dusky-centred in females, there may be variation in this character in young birds.

Cisticola carruthersi

Two birds with negligible skull-ossification were netted with an adult in papyrus at Lake Kanyaboli on 8th June, 1969. One is a male, the other unsexed. They are identical.

The main difference between the immature and adult is on the upperparts (see photo) where the characteristic chestnut crown is light brown, and the grey-brown, heavily streaked with black, mantle is light brown finely streaked with dark brown, hardly contrasting with the crown. The underparts are very similar to those of adults but there is a slight yellowish wash, especially on the chest. Jackson (1938) gives iris hazel, bill black with grey at the base of the lower mandible, and legs flesh, and five adults from Lake Kanyaboli have similarly coloured soft parts. The immatures differ in having the iris greyer, bill dusky-brown with lower mandible dirty-flesh, and legs yellowish-flesh. The diagnostic rectrices (dusky throughout apart from whitish tips) and edgings to the primaries (sepia-brown not rufous) of adults are also present in the immatures.

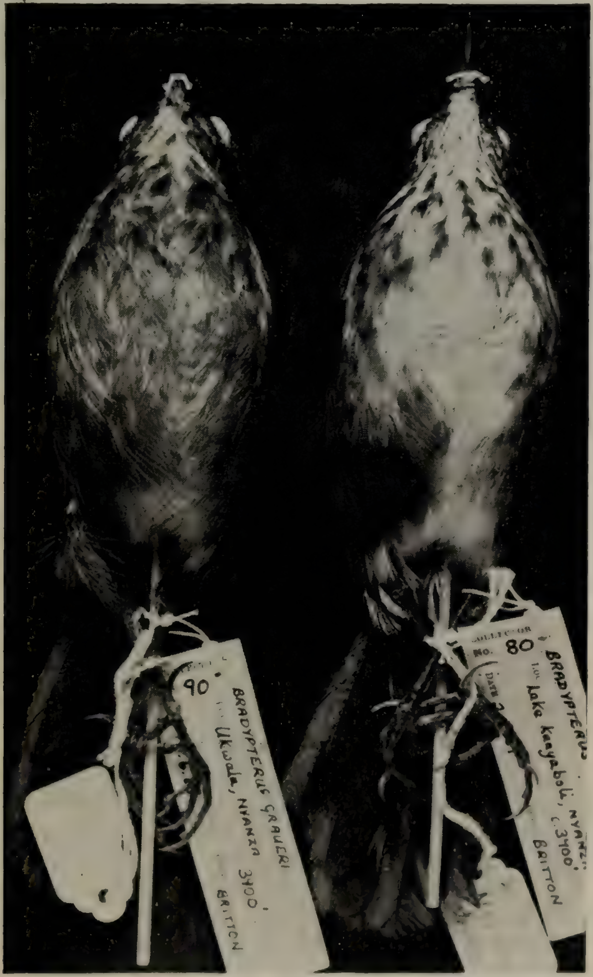

90
BRADYPTERUS GRAUERI
Ukwala, NYANZA
3900'
BRITTON
COLLECTOR
No. 80
DATE
BRADYPTERUS
Lake Kanyaboli, NYANZA
c. 3900'
BRITTON

Plate I

Bradypterus graueri carpalis: left, immature; right, adult ♀.

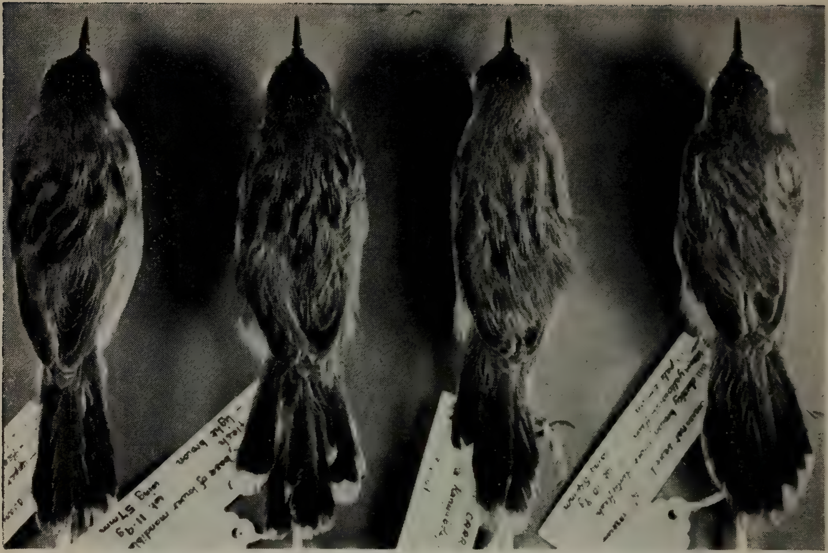


Plate II
Cisticola carruthersi: left, two adults; right, two immatures.

References:

Britton, P. L. & Harper, J. F. 1969. Some new distributional records for Kenya. *Bull. B.O.C.* 89: 162–165.

Jackson, F. J. 1938. *The Birds of Kenya Colony and Uganda Protectorate.* Gurney and Jackson, London.

Mackworth-Praed, C. W. & Grant, C. H. B. 1955. *Birds of eastern and north-eastern Africa.* Vol. 11. Longmans, London.

Birds in *Brachystegia microphyllum* in southern Tanzania

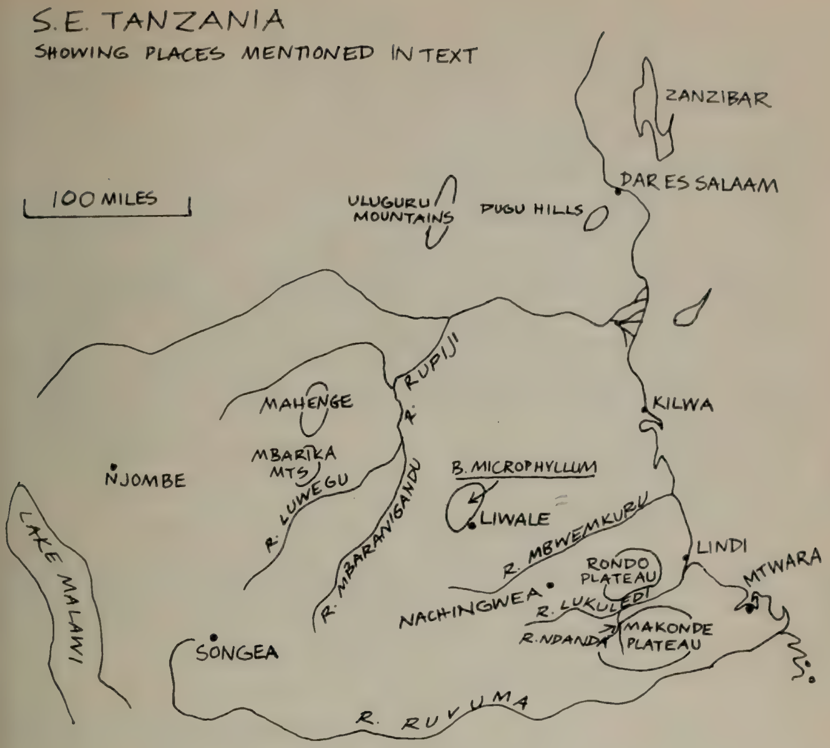
by R. Stjernstedt

Received 14th November, 1969

In *Brachystegia microphyllum* woodland at Liwale, in Mtwara region, southern Tanzania, during 1967 and 1968, I found a number of forest birds, including one montane forest species, *Bessonornis anomala.*

This appears rather anomalous, since the area is not montane (altitude 2,200 ft. a.s.l.—nearest highlands the Mbarika mountains 100 miles away to the north-west), and *B. microphyllum* is not normally a forest tree. Therefore it is interesting to compare the avifauna of this *B. microphyllum* habitat with that of surrounding areas, which is all "miombo" woodland (*Brachystegia* spp. but *B. microphyllum* never dominating).

Brachystegia microphyllum is fairly commonly found in "miombo" country, growing in isolated strips fringing the tops of hills or escarpments. At Liwale, however, it is the dominant tree over a large block of country some 20 miles across, extending north and west from Liwale township, starting on the north bank of the River Liwale on which the township is situated. The trees are 70–80 feet tall, their flat tops forming a continuous ceiling, and unlike the other *Brachystegia* spp. they are evergreen. The floor is mostly devoid of grasses but often with a dense dry shrubby undergrowth which persists and becomes more rank in open patches, resembling coastal thickets. Thus


S.E. TANZANIA
SHOWING PLACES MENTIONED IN TEXT
100 MILES
ZANZIBAR
DAR ES SALAAM
ULUGURU MOUNTAINS
PUGU HILLS
R. RUFIJI
MAHENGE
MBARIKA MTS
R. LUWEGU
NJOMBE
LAKE MALAWI
R. MBARAN'GANDU
B. MICROPHYLLUM
LIWALE
KILWA
R. MBWEMKURU
RONDO PLATEAU
LINDI
MTWARA
NACHINGWEA
R. LUKULEDI
MAKONDE PLATEAU
R. NDANDA
SONGEA
R. RUVUMA

whether it classifies as forest or not, it provides much the same habitat for birds as more conventional evergreen forest.

It is hard to see why this block of country forms such a clearly demarcated area of vegetation. It is the water-shed between the Mbwemkuru and the Rufiji-Mbaran'gandu-Luwegu river basins, and may have a slightly higher rainfall than surrounding areas, but in altitude it is only slightly raised above them. Eastwards is a "sea" of "miombo" dropping imperceptibly to the coast 120 miles away. I am not familiar with the country westwards, but from the map it appears that the land slopes gradually down to the Mbaran'gandu river, over a vast uninhabited expanse of the Selous Game Reserve. The next feature is the Mbarika mountains, and then the Mahenge massif, both of which top the 1,500 metre contour (4,800 ft.) I do not know if these are afforested, but if they are this would be the nearest montane forest, 100 miles to the north-west. To the north, the country changes abruptly back to ordinary "miombo", and after another 100 miles across the Selous Game Reserve comes the Rufiji river.

100 miles to the south-east, across unrelieved "miombo", is the Rondo Plateau, altitude 2,500 feet, with a large block of true primary forest. The Forestry Department has replanted a bit with teak and mvule, but a large part is undisturbed (uninhabited because there was no water until wells were recently bored). Here there occurs *Oriolus chlorocephalus*, typically a montane forest species (Moreau 1966: 214). *Phyllastrephus debilis* is mentioned in Mackworth-Praed & Grant (1957: 127) as occurring both at Rondo and Liwale, and this is the one isolated suggestion of the occurrence of forest

birds at Liwale I can find in the literature. I have not found either of these species, but did find *Neocossyphus rufus*, a bird with a discontinuous distribution from East African coastal forest to the Congo forest (Moreau 1966: 167). Although at much the same altitude at Liwale, Rondo is a steep-sided plateau with a spectacular escarpment dropping 1,500 ft. into the well-watered and heavily settled Lukuledi valley on its south side. The other approaches slope away more gradually to "miombo" country.

Across the valley from Rondo, at the same altitude, is the Makonde plateau, which was originally probably very similar but has been heavily settled by the Makonde tribe for some time, and all forest destroyed leaving regenerating thicket where not now cultivated. The Makonde used to walk down to the Ruvuma River to fetch water before pumps were installed.

In the list below, the forest birds I have observed at Rondo are compared with those for Liwale *B. microphyllum*. Only one of these species have I seen in ordinary "miombo"—*Erythrocercus livingstonii*, and this was probably on a non-breeding movement.

Apart from Rondo and Liwale, there are odd scraps of evergreen forest

TABLE

Forest birds, Liwale *B. microphyllum* and Rondo Plateau

	Liwale	Rondo	
Cercococcyx montanus	XX		At Liwale the forest is ringing with the calls of this bird from October to January. This is a bird of montane forests in East Africa but further south in Malawi Benson (1953: 34) records it only *below* 2,500 ft.
Ceuthmochares aereus	X	X	Also in riverine vegetation and dry coastal thicket.
Tauraco livingstonii		X	Also evergreen riparian forest with large trees.
Smithornis capensis	X	X	Also elsewhere where thickets and large trees.
Pitta angolensis	XX	XX	Liwale 16.11.67. Rondo: heard 1.2.68.
Parisoma (*Myioparus*) *plumbeum*	XX		Not strictly a forest species, but very characteristic of Liwale *B. microphyllum* and not seen elsewhere.
Erythrocercus livingstonii	X		Common in many patches of riparian evergreen forest as well as at Liwale, where its song is always a familiar sound. As mentioned above also seen in pure 'miombo' once, at Nachingwea 26.9.67, a party of 3 or 4. They were producing a very quiet squeaky sort of sub-song, quite different from that of Liwale.
Trochocercus cyanomelas	X		Frequently seen and heard Liwale *B. microphyllum*. Seen twice in coastal thicket, 6.10.66 and 24.10.68.
Neocossyphus rufus		XX	Rondo 13.3.68. Not previously recorded south of Zanzibar or the Uluguru mountains (Mackworth-Praed & Grant 1957: 254). A clear piercing whistle which was recorded and then played back brought two birds out of the dense tangle of undergrowth and lianas along the road through the forest. The rufous tail with darker central feathers, constantly fanned and flirted, reminded one of a *Cossypha*, but this bird is a good bit larger, and the rest of its plumage plain brown, with a rusty tone but less red than the contrasting tail. The tape recording made the birds fly agitatedly back and forth between the trees on either side, keeping high, replying mainly with alarm notes. However, two days later I tried to repeat this performance and failed to get any response.

	Liwale	Rondo	
Bessonornis anomala	XX		1.12.68, Liwale, in fairly dense shrubbery under *B. microphyllum*. Singing a rich but subdued song. Not previously recorded from this region—nearest Songea-Njombe districts and Ulugurus, in montane forest. When called up with tape recording it came very close and replied with a distinctive alarm-note sounding more what one would expect to come from a greenbul. Song appeared to have an imitative component, for instance something very like a Red-chested Cuckoo heard.
Erythropygia quadrivirgata	X	X	A characteristic bird of both places, although seen and heard also at other places with dense vegetation.
Campephaga sulphurata	X		Often seen Liwale—elsewhere only once in riparian forest, Ndanda 18.1.67.
Telophorus quadricolor (*Malaconotus viridis*)	X	X	Its striking call a familiar feature equally of Liwale *B. microphyllum* and coastal thicket.
Nicator chloris	X	X	A typical evergreen forest species but also found singing in large trees by watercourses, for example. Generally anywhere there are thickets and large trees (from which it invariably sings).
Symplectes (*Ploceus*) *bicolor*	X		One of the forest weavers showing no sexual dimorphism, and with a very striking and individual call-note, presumably another forest adaptation. It is very characteristic of Liwale *B. microphyllum*, but I have also seen it in coastal thicket and other patches of dense vegetation.

XX—Only seen here.
X—Also seen elsewhere but characteristic here.

vegetation along permanently running rivers, which are few and become small trickles in the dry season—the Lukuledi, Ndanda and Mbwemkuru. There are also fragments of forest vegetation in the coastal strip, and some of the birds below are found in coastal thicket.

The Rondo avifauna is obviously of a coastal forest type, similar for instance to that of the Pugu hills near Dar es Salaam. The Liwale birds, however, have a montane element in *Bessonornis anomala*.

All these birds were seen during November–January, the breeding season, and were singing or uttering territorial call-notes. Most of them were brought to light by calling them up close enough for identification with tape recordings made on the spot. Only by using this technique was I able to obtain lasting views at close quarters of such shy and skulking species as *Bessonornis anomala* and *Neocossyphus rufus*. These two in particular responded quite spectacularly to hearing their own voice coming unexpectedly from a human being!

References:

Benson, C. W. 1953. *Check list of Birds of Nyasaland.* Blantyre and Lusaka: Joint Publications Bureau.
Mackworth-Praed, C. W. & Grant, C. H. B. 1957. *Birds of Eastern and North-Eastern Africa.* London: Longmans, Green.
Moreau, R. E. 1966. *The Bird Faunas of Africa and its Islands.* London: Academic Press.

[The avifauna of *Cryptosephalum* forests in north-western Zambia is a mixture of "miombo" woodland and moist evergreen forest elements, and provides an interesting comparison with *B. microphyllum* woodland. For a consideration of the fauna and flora of *Cryptosepalum*, see Cottrell & Loveridge, *Proc. & Trans. Rhod. Sci. Assoc.* 51, 1966: 79–120.—Ed.]

PURCHASED
OLOGY LIBR

The stystematic status of the form of *Streptopelia picturata* on Diego Garcia

by C. W. Benson

Received 3rd December, 1969

Reichenow (1900) described a turtle dove inhabiting Diego Garcia, in the Chagos Archipelago, central Indian Ocean, at 9° 50′ S., 75° E., as *Homopelia chuni*. It has subsequently been placed as a subspecies of *Streptopelia picturata*; see for example Peters (1937). Reichenow apparently had only the type specimen available. In 1967 H. A. Fehlmann obtained two more for the Smithsonian Institution, which I have had the loan of.

According to Reichenow's description, *S. p. chuni* is a dark edition of *S. p. picturata* (Temminck), and resembles it in having a bluish grey head, whereas all the other subspecies have a purple head (Benson, 1967: 76). However, Dr. G. Mauersberger (pers. comm. to Dr. W. R. P. Bourne, 12th May, 1969) has compared the type of *chuni* (specimen no. 50.166 in the Zoologisches Museum, Humboldt Universität zu Berlin) with five old specimens therein of nominate *picturata*. It is reported to differ from these five in having the forehead, crown and hind neck brownish vinaceous instead of bluish grey. This is also true for the sides of the neck, which are however somewhat lighter and more washed with buffy brown, especially on the cheeks. It does not have the crown "düster grau, weinfarben verwaschen" (i.e. dull grey, faintly tinged vinaceous), as indicated by Reichenow. Other differences are very slight, possibly merely individual or due to age—in *chuni* the bend of the wing a little less coppery, and both blue-grey on the rump and tail-coverts, and vinaceous on the mantle and upper wing-coverts, replaced by brown. Dr. Mauersberger is not convinced that *chuni* is separable from nominate *picturata*, and does not understand Reichenow's statement that it is much darker than that form.

Fehlmann's specimens, both sexed as females, were collected on 13th June and 5th July, 1967. They were placed in a preservative of a half and half mixture of turpentine and 95 % alcohol, from which they were taken out and skinned in April, 1968. They have been compared with the material of *Streptopelia picturata* as a whole in the British Museum (Natural History) and in the University Museum of Zoology, Cambridge, previously studied by Benson (1967: 75–78). In their general colour, disregarding that of the head, they are like nominate *picturata* and *comorensis*, but the vinaceous, and the brown on the posterior of the upperside, is darker. This might be due to their recent collection, and these colours may eventually fade. It could explain why Reichenow remarked on the darkness of the type of *chuni*, which had been collected only about a year previously, on 24th February, 1899, whereas in 1969 Dr. Mauersberger was unable to perceive this character. Benson (1967: 76) remarks that in nominate *picturata* and *comorensis* the abdomen is grey or buffy white, without any purplish suffusion. Both Fehlmann's specimens have the abdomen rather markedly buffy, especially the June one, in which buff is more marked than in any specimen of either nominate *picturata* or *comorensis*. But on this character it is impossible to suggest whether they are nearer the one or the other, since these two subspecies show no constant difference on this respect, and there is much individual variation in both.

[*to be continued*]

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be listed at the end of a contribution, in the same format as in the notice to contributors to the *Ibis* (see any 1969 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

Contributors are entitled to a maximum of ten free copies of the number of the *Bulletin* in which their contribution appears, provided that it exceeds one page of the *Bulletin*. Extra copies at cost price can be ordered through the Editor at the time of submission of the manuscript.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s*. for years up to 1968 (Vol. 88) and 7*s*. 6*d*. for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 7*s*. 6*d*., payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

Bulletin of the

British Ornithologists' Club

Edited by
C. W. BENSON

R

Volume 90 No. 2 April 1970

Committee

Dr. J. F. Monk (*Chairman*)
Sir Hugh Elliott, Bt., O.B.E. (*Vice-Chairman*)
C. W. Benson, O.B.E. (*Editor*)
Mrs. J. D. Bradley
D. R. Calder (*Secretary*)
J. H. Elgood
R. E. F. Peal
P. Tate (*Treasurer*)
P. L. Wayre

Dates of meetings to be held during 1970

19th May. Speaker: Mr. C. W. Benson. Subject: The Birds of Aldabra. Venue: The Criterion.

21st July, 15th September, 17th November. Speakers to be arranged. Venue: The Criterion (except in July).

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 90 No. 2 Published: 20th April, 1970

The six hundred and sixty-third meeting of the Club was held at the Criterion in Piccadilly, London, W.1. on Tuesday, 17th March, 1970, at 6.30 p.m.

Chairman: Sir Hugh Elliott; present: 17 members and 6 guests.

Mr. J. R. Beck gave a talk on the birds of South Georgia and the South Orkneys with particular reference to work carried out by him there. He illustrated his address with excellent colour slides.

The systematic status of the form of *Streptopelia picturata* on Diego Garcia

by C. W. Benson

(PART II)

Received 3rd December, 1969

On the head, Fehlmann's July specimen resembles nominate *picturata*, but the grey of the crown is darker, and on the sides and throat there is some vinaceous tinge. The June specimen shows no grey, but is darker vinaceous than in *comorensis*, which might be partly the underlying effect of the presence of grey. It can also be seen that according to Dr. Mauersberger grey is apparently lacking on the head of the type of *chuni*. Benson points out that there is usually some suffusion of grey on the rump and upper tail-coverts in nominate *picturata* and in *comorensis*. The June specimen shows no sign of this, nor evidently does the type of *chuni*, though the July specimen does have some grey on the upper tail-coverts. The rump feathers are missing in the latter, and must have been lost at the time of collecting.

Wing-lengths of Fehlmann's two specimens are 163, 165 mm. Reichenow gives that of the type of *chuni* as 165, and Dr. Mauersberger as 166 mm. These measurements agree better with those for females given by Benson for nominate *picturata* rather than for *comorensis*. The type was apparently unsexed, but it would appear to be a female from its wing-length. Moreover Dr. Mauersberger remarks on the absence of vinaceous on the mantle and upper wing-coverts. As pointed out by Benson, females in all the subspecies except possibly *rostrata* tend to have the purple on the upperside less extensive than in males, though actually in Fehlmann's two it does extend to these areas.

It is unfortunate that Fehlmann's specimens had to be initially preserved in the solution already described, since this makes it difficult to interpret with complete certainty the colour-characteristics which they now show. Nevertheless the Diego Garcia population could be the result of hybridisation between nominate *picturata* and *comorensis*. But it is best to continue to recognise *chuni*, although further investigation is needed. Loustau-Lalanne

(1962) reports that the species is well established over the whole of Diego Garcia. Field-observations could assist in establishing the proportions of grey and purple on the head.

Loustau-Lalanne states that it is believed that there has been an introduction to Diego Garcia from the Seychelles, though that there is no evidence of this nor any record of the date of such an introduction. The first apparent record is by Finsch (in Finsch & Blasius, 1887), who made a brief visit to Diego Garcia when the "Chimborazo" of the Orient Line called for coal on 9th July, 1884. He did not see any doves himself, but records (p. 370) that Count Baudissin (who took him ashore) found many "Tauben" (presumably *Streptopelia picturata*) near Marianne Point which he could not describe, but undoubtedly introduced from Mauritius or Madagascar. The first definite evidence of its presence seems to be the collecting of two specimens by Vanhöffen (1901) during the short visit of the "Valdivia" expedition to Diego Garcia on 23rd February, 1899, one of which was used by Reichenow (1901) in describing *chuni*. The fate of the second specimen is not known.

Conceivably there was an artificial introduction by man of *Streptopelia picturata* from the Seychelles. The nominate subspecies appears to have been introduced into the Seychelles (most probably from Mauritius) at least as early as 1870 (Benson, 1967), and has hybridised extensively with the original subspecies, *rostrata*, which now exists more or less pure only on Cousin Island (Penny, 1968). But if there was such an introduction to Diego Garcia, neither the type of *chuni* nor Fehlmann's two specimens seem to show any tendency towards *rostrata*—none of its greyness below or slate in the tail. *Rostrata* is moreover a small subspecies, with wing-length never exceeding 160 mm. (Benson, 1967). It seems much more likely that there was an introduction from Mauritius, since until 1965, when it became part of the British Indian Ocean Territory, Diego Garcia was a dependency of Mauritius. There is a useful description of the island in Scott (1961). Four old specimens from Mauritius, inseparable from nominate *picturata*, have been available, two in the British Museum and two in Cambridge. One of the former bears an 1846 registration number. According to Rountree *et al.* (1952) the introduction to Mauritius (from Madagascar) was probably artificial. Any introductions to Diego Garcia were probably also artificial. Another point in favour of an introduction from Mauritius rather than the Seychelles is that Gardiner (1907) reported that sparrows (presumably *Passer domesticus*) had been introduced to the Salamon atoll, in the Chagos Archipelago to the north of Diego Garcia, from Mauritius by 1905.

Assuming that the present population of *Streptopelia picturata* on Diego Garcia is the result of hybridisation between nominate *picturata* and *comorensis*, it is not difficult to picture how the stock of the latter might have been introduced. According to Greenidge (1968: 174), the slave trade from Zanzibar did not really come to an end until Zanzibar became a British Protectorate in 1897. An illicit slaver out of Zanzibar calling for victuals at the Comoros might have picked up some doves which were later dumped, together with the human cargo, on Diego Garcia. Scott (1961) does not give a date for the first human colonisation of the island, but this might have been in the 1840's, although slavery had been officially abolished in Mauritius and its dependencies in 1835 (*op. cit.*: 134).

The possibility of future changes in *Streptopelia chuni*, in colour and morphology, should be kept in mind. The population of the Chukar Partridge *Alectoris chukar* which was introduced to St. Helena before 1588 is a little paler than the palest natural subspecies, *A. c. werae* of Persia, and smaller than it (Watson, 1966). In North America adaptive changes in colour and morphology have occurred in the House Sparrow *Passer domesticus* in a mere 90 years (Packard, 1967). There is evidence that hybrids between *Streptopelia p. picturata* and *rostrata* have been introduced to St. Joseph Atoll in the Amirantes (Benson, in press), and possible future changes in this case too should be kept in mind.

I have to thank Dr. George E. Watson, Chairman of the Department of Vertebrate Zoology, for the loan of the two specimens of *S. p. chuni* in the Smithsonian Institution, and for advising me about their treatment. I am also grateful to Dr. W. R. P. Bourne for criticising an original draft of this note, drawing my attention to several references, and placing at my disposal correspondence with Dr. G. Mauersberger. Both he and D. Goodwin have looked at specimens with me.

References:

Benson, C. W. 1967. The birds of Aldabra and their status. *Atoll Research Bull.* 118: 63–111.

— in press. An introduction of *Streptopelia picturata* into the Amirantes. *Atoll Research Bull.*

Finsch, O. & Blasius, R. 1887. Diego Garcia und seine seeschwalben. *Ornis* 3: 361–393.

Gardiner, J. S. 1907. The Percy Sladen Trust Expedition to the Indian Ocean in 1905. Description of the Expedition. *Trans. Linn. Soc. Lond.* (*Zool.*) (2)12: 1–55.

Greenidge, C. W. W. 1958. *Slavery*. London: George Allen & Unwin.

Loustau-Lalanne, P. 1962. The birds of the Chagos Archipelago, Indian Ocean. *Ibis* 104: 67–73.

Packard, G. C. 1967. House Sparrows: evolution of populations from the Great Plains and Colorado Rockies. *Syst. Zool.* 16(1): 73–89.

Penny, M. 1968. Endemic birds of the Seychelles. *Oryx* 9(4): 267–275.

Peters, J. L. 1937. *Check-list of birds of the world.* 3. Cambridge, Mass.

Reichenow, A. 1900. Zwei neue arten von den Tschakoinseln. *Orn. Monatsb.* 8: 140–141.

Rountree, F. R. G., Guérin, R., Pelte, S. & Vinson, J. 1952. Catalogue of the birds of Mauritius. *Mauritius Inst. Bull.* 3(3): 156–217.

Scott, R. 1961. *Limuria: the lesser dependencies of Mauritius.* London: Oxford University Press.

Vanhöffen, E. 1901. Bericht über die bei der deutschen Tiefseeexpedition beobachten vogel. *Journ. Ornith.* 49: 304–322.

Watson, G. E. 1966. The Chukar Partridge (Aves) of St. Helena Island, South Atlantic Ocean. *Proc. Biol. Soc. Wash.* 79: 179–182.

White-faced Storm Petrels *Pelagodroma marina* in the North Atlantic

by P. A. Buckley and C. F. Wurster

Received 27th June, 1969

A growing number of sight records of this species in the open North Atlantic, including a half-dozen rather close to the north-eastern coast of North America, prompts a fresh look at the non-breeding North Atlantic distribution of this pelagic bird, variously known as White-faced Petrel (A.O.U. Check-list, 1957), Frigate Petrel (Palmer, *Handbook N. Amer. birds*, 1962) and White-faced Frigate-Petrel (many sources). Following Bourne (*Ibis*, 1967: 157–158 and *in litt.*) we prefer the present name because it is both morphologically descriptive and allies the bird with its close relatives, the all-black storm petrels.

Table I

North Atlantic occurrences of *P. marina* sspp. away from known breeding grounds.

	LOCATION	DATE(S)	NUMBERS	REFERENCES
1	ca. 34° N, 36° W	12th June, 1964	one	*Sea-Swallow*, 18: 22
2	ca. 40° 29′ N, 55° 22′ W	11th August, 1964	one	S. Chapman (Bourne, *in litt.*)
3	ca. 40° N, 9° 52′ W	13th August, 1962	"parties"	*Sea-Swallow*, 15: 19
4	ca. 39° 48′ N, 71° 2′ W	18th August, 1953	one[1]	Gordon, *Auk*, 72: 81, 1955
5	ca. 43° 50′ N, 57° 30′ W	18th August, 1967	one	Buckley (this note)
6	ca. 45° 32′ N, 43° 27′ W	19th August, 1957	five	Wurster (this note)
7	ca. 47° 18′ N, 7° 23′ W	24th August, 1963	one	A. D. Pearson (Bourne, *in litt.*)
8	between 7, above, and Wolf Rock Light (Cornwall)	27th August, 1963	one	*ibid.*
9	ca. 38° 54′ N, 69° 30′ W	29th August, 1967	one to three	Wurster (this note)
10	ca. 40° 34′ N, 66° 9′ W	2nd September, 1885	one[2]	Ridgway, *Auk*, 2: 386, 1886
11	30 miles N of Cape Cod, Mass.	1st October, 1946	one	Abbott, *Auk*, 63: 261, 1946
12	45–46° N, 45–37° W	16–17th October, 1944	"several"	*Brit. Birds* (Supplement), 1948
13	Walney Id., Lancashire, England	"November", 1890	one[2] [3]	*ibid.*, 51: 269
14	Colonsay, Inner Hebrides, Scotland	1st January, 1897	one[2]	*ibid.*, 51: 269

[1] specimen, *eadesi*

[2] specimen, *hypoleuca*

[3] perhaps inauthentic; see Bourne, *Ibis*, 1967: 158

Table I lists the known records of *P. marina* further than 300 miles from known breeding locations in the North Atlantic. These have been extracted from many sources, but mostly from *Sea Swallow*, the publication of the Royal Naval Birdwatching Society. We thank W. R. P. Bourne for those data and several unpublished records. Included also are several of the writers' previously unpublished records, not far from the coast of North America. Whether any of these records fall within the "North America" of the A.O.U. Check-list will be decided by the committee currently preparing the 6th edition. Detailed descriptions of the birds we saw are available to anyone wishing them, but would be out of place in this paper. Dr. Bourne agrees fully with our diagnoses, and P. A. Buckley has examined skins, confirming our field identifications. Figure 1 plots all records from Table I on a map of the North Atlantic.

This species has been considered accidental or a vagrant in most of the North Atlantic, with only a handful of records away from the immediate vicinity (i.e., within 300 miles) of known breeding grounds in the Canaries and the Salvages off the north-west coast of Africa. Table I, however, lists 14 records of which we are aware. Evidently this petrel is not as rare as has been supposed.

At least six records occurred between lat. 40–45° N and long. 55–70° W. This is not far from the North American continental shelf; the records apparently follow the course of the Gulf Stream in those latitudes. All occurred between 1st August and 1st October. The remaining records are scattered and too few to allow deduction of a pattern, although most European records also occurred during late summer and early fall.

The origin of these birds and their route of dispersal is complicated by the occurrence of two reasonably distinct subspecies that have quite different breeding seasons in spite of the geographical proximity of their breeding areas. *P. m. hypoleuca* breeds in the Canary and Salvage Is. (ca. 15° W, 30° N) and has been taken several times in the North Atlantic (see Bourne, *op. cit.*) far from its breeding grounds. *P. m. eadesi* breeds in the Cape Verde Is. (ca. 24° W, 16° N) and has been taken at least once in the western North Atlantic (see Bourne, *op. cit.* and Table I). *P. m. hypoleuca* breeds in April–May, however, and *eadesi* in February. One might therefore assume that the two races have different wintering areas and patterns of dispersal. But the absence of numbers of specimen-supported North Atlantic records obviates any population dispersal analyses at present, and where the majority of both races go after leaving their breeding grounds remains unknown. The present data only allow us to state that there is what seems to be a dispersal of *P. marina* sspp. in the months of August, September and October, north-westward as far as the continental shelf of north-eastern North America, and perhaps also north-eastward offshore from Iberia, France and the British Isles. While this dispersal is chronologically "post-breeding", the ages of birds involved is unknown; but the numbers certainly indicate the species to be a regular visitor, rather than a mere straggler, to the North Atlantic away from known breeding colonies.

More records (especially specimens) from the North Atlantic are needed, particularly from mid-ocean (30–55° N, and 25–50° W) and in winter and early spring, the non-breeding seasons for both *eadesi* and *hypoleuca*. Similar data are also needed from the South Atlantic, where the situation is compounded by the presence of the nominate race, which supposedly "winters" in the "tropical South Atlantic" (Palmer, *op. cit.*).

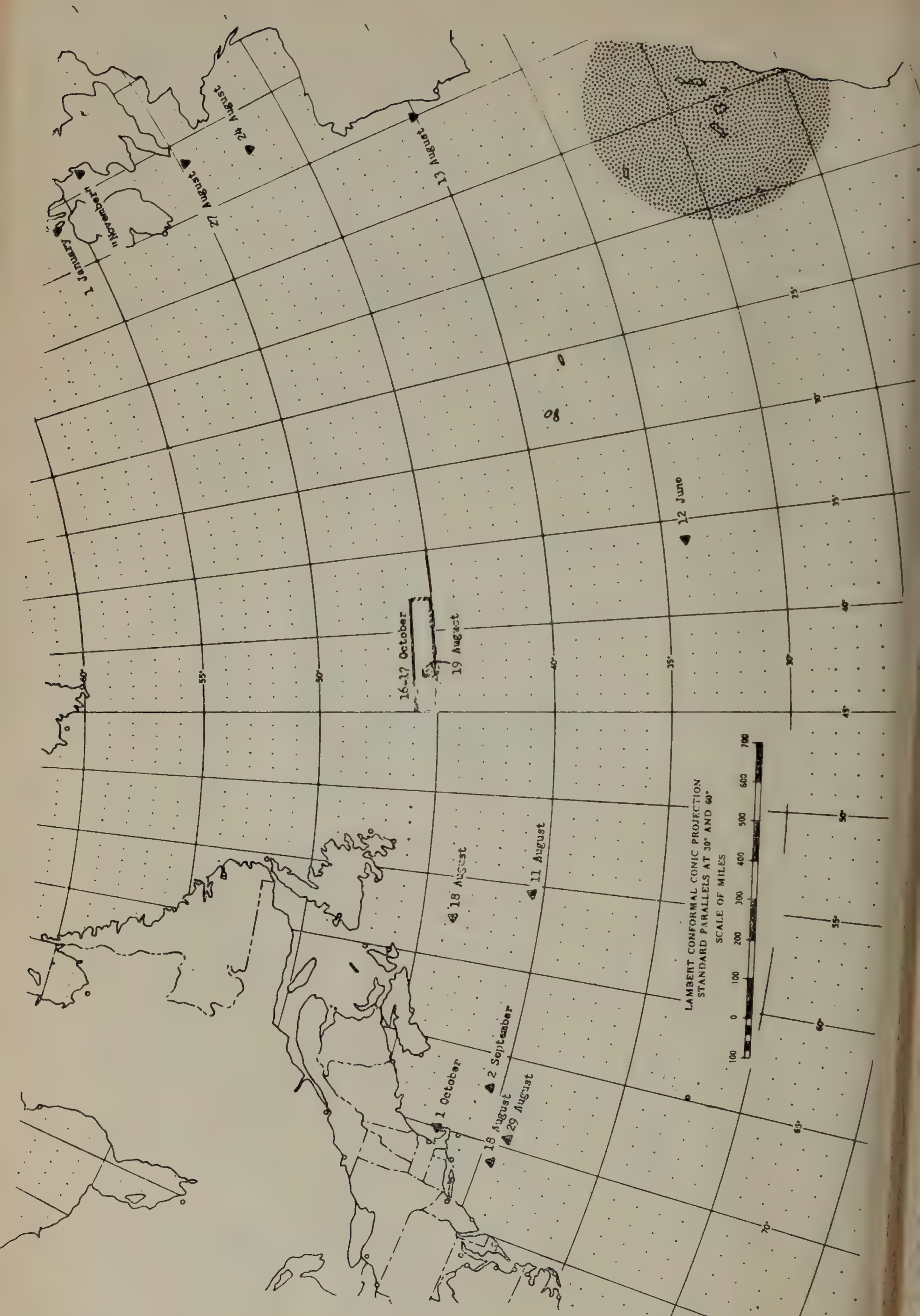

1 January
November
27 August
24 August
13 August
12 June
16-17 October
19 August
18 August
11 August
2 September
1 October
18 August
29 August
LAMBERT CONFORMAL CONIC PROJECTION
STANDARD PARALLELS AT 30° AND 60°
SCALE OF MILES
100
0
100
200
300
400
500
600
700
60°
55°
50°
40°
35°
30°
25°
30°
35°
40°
45°
50°
55°
60°
65°
70°

FIGURE I

North Atlantic map (Lambert conformal conic projection) showing location of 14 White-faced Storm Petrel reports listed in Table I. Stippling indicates ca. 300-mile radius of known breeding colonies in Salvages and Canaries.

A new subspecies of the Common Iora from north Borneo

by Kenneth W. Prescott

Received 7th December, 1969

While serving in the north Borneo area with the United States Navy in 1945, I made a collection of birds (18 birds of eight species), now in the Museum of Zoology, University of Michigan. They were collected on the small island of Muara, Brunei Bay, situated at approximately 5° N longitude and 115° E latitude just north-east of the Sarawak boundary and only a few miles from the mainland. Among these were four specimens of the Common Iora, *Aegithina tiphia*, which were routinely identified as *Aegithina tiphia viridis*.

Subsequently, it came to my attention (Smythies, *An annotated checklist of the birds of Borneo*, Sarawak Museum J., 1957, 7: 698–99), and Max C. Thompson, *Birds from North Borneo*, University of Kansas Publications, 1966, 17: 420) that *viridis* is the race of southern Borneo and Sarawak; while a larger, yellower race *aequanimis* inhabits north Borneo and also Palawan, Philippine Islands. (See Mayr, *Bull. Raffles Mus.* 14: 38 and Amadon, 1943, *Ibis* 85: 333).

Therefore, it seemed desirable to re-examine my four Ioras from Muara. Dean Amadon and I compared them with material at the American Museum of Natural History and additional skins borrowed from the United States National Museum. To our surprise, the Muara Ioras are not like the race *aequanimis* of adjacent north Borneo only a few miles away. As originally identified, they are more like the race *viridis* of south Borneo, but differ from it too. Once again it is evident that islands, even small barely isolated ones, are often a "law unto themselves" so far as differentiation is concerned.

To emphasise this interesting example of insular isolation, I propose to designate the Muara birds as a separate race, *A. t. trudiae*; named after my youngest daughter, a faithful co-worker in current New Jersey field work. The race, therefore, is designated as:

Aegithina tiphia trudiae, *subsp. nov.*

Type—Adult male, number UMZ 113–999, University of Michigan, Museum of Zoology, collected at Muara Island, Brunei Bay, north Borneo, 17th July, 1945, by Kenneth W. Prescott; testes not enlarged, iris whitish, feet and legs black, upper mandible black, lower mandible grey.

Diagnosis—Differs from *A. t. viridis* in upper parts averaging a darker green and less washed with yellow; the lower parts being duller, less greenish and more yellow. Differs from *A. t. aequanimis* in being less richly yellow below but darker green above washed with less yellow. Two pure white wing bars with the upper noticeably broader. Primaries, secondaries, and tertiaries jet black. Primaries and secondaries have yellow-green on outer edges while the inner edges are whitish, being more broadly so on the secondaries. Tail jet black, upper tail coverts yellower than back; under tail coverts yellow as abdomen. Under parts, throat and abdomen yellowish-green with whitish feathers on extreme lower abdomen. Forehead, crown and back dark green slightly tinged with yellow. Iris white.

The three additional specimens collected during the same period and in the same locality are: UMZ 113-996, testes not enlarged, 19th July, 1945;

113–997, ovary not enlarged, 19th July, 1945; 113–998, ovary not enlarged, 17th July, 1945.

Range—known only from Muara Island, Brunei Bay, north Borneo.

Remarks: The four Muara birds could be easily picked out of a series of either race by being darker green above than the duller coloured southern race *viridis*, but not as yellow below as *aequanimis*; moreover, the bills of the Muara birds appeared to the eye slightly longer than those of *viridis*.

The two *trudiae* females are paler below than the males. While both males have jet black wings and tails, the wings of both females are noticeably greyer and their tails are greenish with faint black barring. In both sexes, the outer edges of the primaries are edged in yellow-green, while the inner edges are whitish. All are noted as having white or whitish irises. The bills, feet and legs of female number 113–997 were recorded as grey as against black for the type male. The specimens were obtained from low second growth in a relatively open area between deciduous woods and the ocean. There were very few birds in the area.

Measurements—(2 males, 2 females): wing-chord, 55.7–57.3 (56.9); tail, 47.0–49.2 (47.8); exposed culmen, 12.4–14.5 (13.4) mm.

ACKNOWLEDGMENTS

I am indebted to Dean Amadon for his diagnostic help in comparing the specimens as well as in the preparation of this note. Robert W. Storer kindly loaned the specimens from the UMZ collection.

The relation of egg colour to laying sequence in the Carrion Crow

by David Holyoak

Received 20th December, 1969

The Carrion and Hooded Crows *Corvus corone* are part of a group of unrelated bird species that often have one, or sometimes two, eggs in the clutch that are paler in colour (less heavily blotched or spotted) than the others. I have also noted this in clutches of the Herring Gull *Larus argentatus* and Common Tern *Sterna hirundo*.

Of 54 Carrion and Hooded Crow clutches (a random sample of nests observed in Leicestershire, north Wales, the Isle of Man, and Hertfordshire) in which I noted the presence or absence of paler eggs, 33 have included one, sometimes two, eggs that were distinctly paler than the rest; in about 15 clutches the eggs were rather uniform in colour, and in the remainder one or more eggs were noted as being "slightly, just, or perhaps a little" paler than the others. In these clutches the presence of a pale egg seemed to be more or less independent of clutch size.

None of the other British Corvidae have a pale egg in the clutch with this frequency, though the Raven *Corvus corax* has a pale egg more often than the remaining species (32 Raven, about 200 Rook *C. frugilegus*, about 65 Jackdaw *C. monedula*, 58 Magpie *Pica pica*, six Jay *Garrulus glandarius* and eight Chough *Pyrrhocorax pyrrhocorax* clutches examined in the nest). The clutches of Corvidae in the collections of the British Museum (Nat. Hist.) also suggest that this is so. Of the museum clutches, the Carrion and Hooded Crows, and the Pied Crow *C. albus* had eggs that varied considerably within many of the clutches, and the few clutches of the Collared Crow *C. torquatus* also suggested this. About a third or less of the Raven clutches included a paler egg. About one in five of the clutches of the Rook had an egg or two that were paler than the others. The egg colour seemed to vary much less within a clutch in *C. brachyrhynchos*, *C. macrorhynchos*, *C. coronoides*, *C. monedula*, *C. dauricus*, *C. splendens*, *C. capensis*, perhaps *C. ruficollis* (five clutches), and in other genera of Corvidae such as *Garrulus*, *Pica*, *Cyanopica*, *Cissa*, *Dendrocitta*, *Cyanocitta*, *Pyrrhocorax*, *Ptilostomus* and *Pseudopodoces*.

Of four individually marked female Carrion Crows watched at Tring, Hertfordshire, three had a pale egg in their clutches in both the 1967 and 1968 breeding seasons, and the absence of a pale egg from the clutch of a fourth female was noted in both breeding seasons—suggesting that the presence or absence of a pale egg may be a fixed characteristic of the individual female bird, rather than a result of its state of nutrition, or health, at laying time. In five Carrion Crow and two Hooded Crow clutches I have found that the palest egg was the last one to be laid, and in one of these clutches the penultimate egg was paler than all but the last one. Two of the observers completing British Trust for Ornithology nest record cards for Carrion Crows also mention that the last egg to be laid was paler than the others, and I have found no mention of crows laying a pale egg as an early addition to the clutch.

This suggests that the last egg is often paler than the others because the female bird becomes short of pigment towards the end of laying. It seems, nevertheless, that she is able to repair the deficiency quickly as a repeat clutch is not much, if at all, paler than the first one. Carrion Crows are determinate layers, so that it is not possible to test the "running out of pigment" hypothesis by removing eggs from the clutch as they are laid. However, old observations on Pheasants *Phasianus colchicus* and Red-backed Shrikes *Lanius collurio* which are indeterminate layers show that the removal of eggs leads to a progressive decrease in pigmentation as more and more eggs are removed; these species do not normally have one or more pale eggs in the clutch.

It is difficult to account for the frequency with which the Carrion Crow has a pale egg in the clutch. The reduction of pigmentation in the last egg could, however, be taken as an indication that selection for the present egg colour in the Carrion Crow is slight, or that the balance of selective forces that caused the original colour is changing. There is some evidence for this. Female Carrion Crows usually lay one egg each day until the clutch is complete, and incubation starts gradually. On average perhaps half of the day is spent sitting on the first egg, three-quarters of the day when there are two eggs, and the whole day from then until some time after the young hatch. Observations made at a nest with an automatic nest-visit recording device, and less sustained observations at other nests show that the female bird rarely leaves the nest after the first two or three eggs have been laid, the male bird keeping her supplied with food (Holyoak in preparation).

Carrion Crows now have no significant nest predators in Britain besides man, so there may be little need for the last egg or two, at least, to be concealingly marked, and this may apply to the rest of the clutch. Presumably, however, the egg colour originally evolved with reference to such arboreal egg predators as martens *Martes* spp. which are still present throughout much of the species' range. In this connection it is of interest that a number of clutches (about ten) from India and Burma in the British Museum collection do not have pale eggs, and there are none with pale eggs from this area. These few clutches may be a biassed sample, but they do suggest that Carrion Crows in this area have a pale egg in the clutch less often, possibly because of a greater risk of predation. There are, however, many clutches in the museum's collection taken in Europe that do have a pale egg or two, many of these from areas where potential nest predators occur.

Further field observations on Carrion Crow egg colour are needed, both to check the suggestions I have made from rather few data, and to investigate further the significance of the trend towards reduced pigmentation in the last egg or two. There is a good opportunity here for the egg collector to do useful work on a species that is unlikely to suffer through collecting activities, and at the same time to not anger the bird protection movement.

ACKNOWLEDGMENTS

I am grateful to D. Goodwin and C. J. O. Harrison for help in the preparation of this paper, and to a number of people who have helped me with field observations on Corvidae.

Reference:
Holyoak, D. (in preparation). Ecology, behaviour and territory of Carrion Crows.

Apparently undescribed Parrot Eggs in the collection of the British Museum (Natural History)

by C. J. O. Harrison and D. T. Holyoak

Received 6th January, 1970

During a study of the Psittacidae it was found that the eggs of a number of parrot species, which were in the British Museum (Nat. Hist.) collection, appeared to be undescribed for the particular species or subspecies. This conclusion was based on a comparison with published data in M. Schönwetter's *Handbuch der Oologie*, parts 8–9 (1963–4) and checked by reference to more recent major regional works, but it is possible that some published data have been overlooked. The presence of this amount of undescribed material in the collection is partly due to the relatively recent incorporation of the bulk of the Henry Munt collection, which was received as a part of the Rothschild collection, although some had come directly to the museum at an earlier date. Most parrot species nest in holes in forest trees, so that their eggs do not occur very frequently in collections. Munt specialised in collecting white eggs such as are characteristic of parrots, obtaining many of his specimens from aviculturists, and some of the eggs that have come directly to the museum come from similar sources.

Such eggs occasionally show abnormalities of shape or surface texture, but in general resemble those of wild birds and form a valid source of data in the absence of these. The variation most likely to occur is for the eggs to be abnormally elongated or to taper strongly, which might be due to constriction of the oviduct in individuals which do not have the normal opportunity for egg-laying. Parrots are more likely to lay eggs in captivity than are some other species. They tend to be long-lived, and if taken when young they may become "imprinted" on their owner, may regard the owner as a mate, and therefore be more likely to lay eggs in cages and similar places providing the minimum of adequate conditions, where other types of birds would be unwilling to do so.

In general, parrot eggs are rounded, white and variably glossy. The eggs of the smaller species tend to be more nearly round, those of the larger being more oblong-oval. In the following list the eggs of subspecies as well as species have been included since there may be significant regional variations. The dimensions are given in millimetres; the number in parentheses is the museum register number of the specimen or clutch.

Chalcopsitta atra atra 31.0 × 25.7, June 1908; laid in captivity, Hoddam Castle, Ecclefechan, Scotland; obtained by E. J. Brook, Munt Colln. (1941.3.1.658). A letter from Brook and from his factor, W. H. Veitch, indicate that the latter had care of the collection, and that eggs were laid by various parrot species but were only taken if incubation proved unsuccessful. The bird which laid this egg had produced a young one the previous year.

Chalcopsitta sintillata sintillata 31.4 × 24.1, 1908; laid in captivity, Hoddam Castle, Ecclefechan, Scotland; obtained by E. J. Brook, Munt Colln. (1941.3.1.659).

Eos bornea 29.8 × 23.0 (inscribed *Eos rubra*) (1921.5.30.2); 29.9 × 24.5, 30.1 × 24.2 (1962.1.588); 29.8 × 24.5, 31.2 × 24.6, 21st May, 1913 (1941.3.1.661); all laid in captivity, Munt. colln.

Trichoglossus ornatus 27.5 × 21.8, 23.7 × 21.5, 26th January, 1901, 5th October, 1901 (1941.3.1.704–705); 27.2 × 21.9, 23rd February, 1901 (1921.5.30.8); all laid in captivity, Munt Colln.

Trichoglossus haematodus haematodus 26.9 × 21.7, 4th January, 1902; laid in captivity, Munt Colln. (1921.5.30.5).

Trichoglossus haematodus nigrogularis 27.3 × 23.8 (1962.1.591); 29.6 × 21.4, 30.6 × 21.4 (probably atypical), 24th May, 1919 (1941.3.1.679); 27.4 × 23.9, November 1912; obtained by Mills (1941.3.1.678); all laid in captivity, Munt Colln.

Trichoglossus haematodus flavicans 28.9 × 24.1, laid in captivity, Munt Colln. (1962.1.590).

Trichoglossus euteles 24.5 × 22.5, 25.3 × 23.0, 1880; Amsterdam; Munt Colln. (1941.3.1.706).

Psitteuteles johnstoniae 22.0 × 19.0, 22.1 × 19.1, 28th July, 1907; laid in captivity by birds from Mount Apo, Mindanao, Philippines; obtained by Mrs. Johnstone (1907.8.1.1).

Lorius lory lory 27.0 × 22.0, laid in captivity, Munt Colln. (1962.1.596).

Lorius tibialis 30.9 × 24.5, 31.6 × 25.8, 1874; London Zoo, laid in captivity, Munt Colln. (1941.3.1.667). These appear to be eggs laid by the type specimen, which is still the only known specimen of the species (see Sclater, *Proc. Zool. Soc. Lond.*, 1871, p. 499).

Lorius chlorocercus 29.7 × 23.9, 30.3 × 23.9, laid in captivity, Munt Colln. (1962.1.594).

Vini peruviana 19.4 × 17.2, November 1937; laid in captivity, obtained by the Marquis of Tavistock (1937.12.2.1).

Vini ultramarina 22.6 × 18.4, 6th May, 1935 (1938.4.2.1); 22.5 × 18.7, 15th July, 1938 (1938.7.1.1); both laid in captivity, obtained by the Marquis of Tavistock.

Charmosyna pulchella bella 18.9 × 16.2, 10th February, 1908; Moroko Mountains, S.E. New Guinea, laid in captivity by a newly caught bird, obtained by W. Goodfellow (1913.3.6.360).

Micropsitta pusio pusilla 16.2 × 14.3 (two clutches of C/1, but the second shell is damaged), September 1922; Moroko Valley, 1,500 feet, Owen Stanley Range, S.E. New Guinea; taken by W. J. C. Frost, Munt Colln.

(1941.3.1.745). Frost wrote "This Pygmy invariably nests in the mud nest of the termite, in this locality, usually affixed to the trunk or in a fork of trees, about 5 to 10 ft. up and still in occupation [by the termites]. I presume the clutch to be a single egg. I personally never found more, and the natives corroborated."

Calyptorhynchus magnificus macrorhynchus 56.2 × 37.4, 1st July, 1911; Spring Creek, Wyndham, Western Australia; taken by C. P. Comgrave, G. M. Mathews Colln. (1949.10.179). Egg well incubated; taken from hollow in Cabbage-tree Gum at a height of 20 ft. from ground at Spring Creek, 40 miles south of Wyndham.

Calyptorhynchus magnificus samueli 46.2 × 36.1, 6th February, 1895; Finke River, Central Australia; from Marsden Colln., via Crowley Colln. (1901.12.15.624).

Cacatua galerita fitzroyi 43.2 × 31.1, 14th June, 1902; Port Darwin, Northern Territory, Australia; taken for W. R. Saunders (1903.7.30.153).

Cacatua haematuropygia 37.7 × 26.7, laid in captivity, Munt Colln. (1962.1.603).

Anodorhynchus leari 57.0 × 38.4, laid in captivity, Munt Colln. (1962.1.628). This species was previously known only from three specimens that were originally kept in captivity; one of these three birds laid this egg at the London Zoo.

Ara spixii 34.9 × 28.7, laid in captivity, Munt Colln. (1962.1.627).

Ara nobilis cumanensis 33.2 × 26.7, 32.3 × 27.1, laid in captivity, Munt Colln. (1962.1.610).

Aratinga holochlora holochlora 29.9 × 24.7, laid in captivity, Munt Colln. (1962.1.614).

Aratinga auricapillus 30.0 × 21.4, 23rd June, 1909 (1921.5.30.11); 30.7 × 24.5, 30.5 × 24.5, 23rd and 29th December, 1914 (1941.3.1.753–754); all laid in captivity, Munt Colln.

Aratinga jandaya 26.9 × 21.1, 23rd June, 1909 (1921.5.30.10); 29.8 × 24.0, 4th June, 1914 (1941.3.1.752); all laid in captivity, Munt Colln.

Aratinga canicularis canicularis 27.5 × 20.9, laid in captivity, Munt Colln. (1962.1.622).

Pyrrhura cruentata 27.8 × 20.3, 27.5 × 19.4, 1880; laid in captivity, Paris, France; Munt Colln. (1941.3.1.757).

Pyrrhura frontalis chiripepe 25.5 × 20.7, 27.5 × 21.2, 25.6 × 20.7, 26.6 × 19.6, 1st June 1923; laid in captivity, obtained by W. Shore Bailey (1923.11.25.1–4).

Pyrrhura leucotis 26.9 × 20.0, 13th September, 1905 (1921.5.30.12); 25.9 × 20.9, 26.2 × 20.5, 30th August and 13th September, 1905 (1941.3.1.758–759); laid in captivity, Munt Colln.

Brotogeris jugularis jugularis 24.1 × 20.3, 23.3 × 18.8, laid in captivity, Munt Colln. (1962.1.629).

Pionites leucogaster leucogaster? 23.7 × 20.0, laid in captivity, Munt Colln. (1962.1.637).

Pionites leucogaster xanthomeria? 31.0 × 23.6, laid in captivity, Munt Colln. (1941.3.1.784). There is considerable disparity in the size of the above two eggs that were attributed to the same species.

Pionus sordidus 33.0 × 27.7, laid in captivity, Munt Colln. (1962.1.633).

Pionus senilis senilis 35.5 × 23.8, 33.8 × 26.2, 34.9 × 25.7, 35.6 × 25.7, 8th August, 1923; laid in captivity by a bird from Tehuantepec, Mexico; obtained by F. N. Bonston (1923.8.5.1–4).

Pionus chalcopterus 29.3 × 23.7, 1883; laid in captivity, Munt Colln. (1941.3.1.781).

Pionus fuscus 36.2 × 28.9, laid in captivity, Munt Colln. (1962.1.632).

Amazona leucocephala bahamensis 37.9 × 27.2, 14th June, 1909; laid in captivity, obtained by J. L. Bonhote, Munt Colln. (1941.3.1.778).

Amazona autumnalis 37.6 × 30.5, 40.8 × 30.4, 1932; laid in captivity, obtained by H. Whitley (1932.6.1.14–15).

Amazona autumnalis salvini 34.5 × 25.9, laid in captivity, Munt Colln. (1961.1.665).

Amazona barbadensis 36.4 × 25.8, 37.0 × 26.3, laid in captivity, Munt Colln. (1962.1.660).

Amazona aestiva 31.9 × 27.4, 35.1 × 27.3, August 1919 and 1920; laid in captivity, Beverley, Yorkshire, obtained by Dare, Munt Colln. (1941.3.1.774–775).

Amazona ochrocephala panamensis 34.9 × 28.7 (1921.5.30.14); 38.8 × 29.1, November 1901 (1941.3.1.776); 36.7 × 28.0, 36.7 × 27.6, 36.4 × 28.4, January 1902 (1941.3.1.777); all laid in captivity and obtained by E. Earle, Munt Colln.

Amazona farinosa farinosa 41.6 × 33.0, 1885; laid in captivity, Munt Colln. (1941.3.1.773).

Amazona farinosa guatemalae 43.2 × 33.6, 1884; laid in captivity, Munt Colln. (1941.3.1.772).

Amazona farinosa inornata 41.3 × 33.2, laid in captivity, Munt Colln. (1962.1.634).

Amazona guildingii 46.6 × 38.8, 1887; laid in captivity, Munt Colln. (1941.3.1.770).

Amazona imperialis 45.6 × 37.3, laid in captivity, Munt Colln. (1962.1.636).

Poicephalus senegalus mesotypus 29.4 × 26.4, 15th October; Azora District, Bauchi Province, Nigeria; taken by F. C. Paisley (1933.11.1.35).

Poicephalus rufiventris pallidus 26.6 × 23.4, 27.0 × 22.7, 12th May, 1915; Burao, Somaliland; taken by R. E. Drake-Brockman (1946.7.63).

Coracopsis nigra barklyi 34.5 × 24.6, laid in captivity, Munt Colln. (1962.1.640)

Eclectus roratus westermani 37.4 × 30.6, 4th November, 1905 (1941.3.1.799); 43.4 × 29.5, 21st February, 1905 (1921.5.30.15); both eggs laid in captivity, Munt Colln.

Prioniturus discurus waterstradti 30.2 × 25.6, 31.9 × 26.6, 31.7 × 25.4, April 1905; Piso, S. E. Mindanoa, Philippines; taken by W. Goodfellow (1905.11.26.249–251).

Tanygnathus lucionensis 39.5 × 26.6, 36.0 × 27.6, 37.8 × 27.7, 40.9 × 25.0, 40.9 × 26.2, 12th June and 13th June, 1907; 12th June, 1908; 9th June, 1909; September 1912 (1941.3.1.801–805); 36.8 × 27.6, 38.9 × 28.4, 14th June and 22nd June, 1906 (1962.1.642); all laid in captivity, Munt Colln.

Tanygnathus mulleri 41.9 × 29.7, 1869; laid in captivity, Munt Colln. (1941.3.1.806).

Tanygnathus megalorhynchos 38.8 × 28.4, laid in captivity, Munt Colln. (1962.1.641).

Psittacula roseata roseata 26.7 × 21.3, 20th March, 1902; Myingyan, Burma, Munt Colln. via the Rattray Colln. (1941.3.1.819); 24.4 × 21.3, Eastern India, J. Davidson Colln. (1925.12.25.683); 26.1 × 21.0, 24.5 × 21.1, 26.1 × 21.3, 7th April, 1904, Kindat, Burma, taken by C. Underwood, H. N. Coltart Colln. (1961.1.223).

Psittacula roseata juneae 24.4 × 21.6, 24.4 × 20.9, 22nd February, 1878; Pegu, Burma (1885.7.20.209–210); 24.2 × 20.0, 2nd March, 1878, Pegu, Burma (1901.12.15.693); 24.6 × 20.9, 22nd February, 1878, Pegu, Burma (1962.1.658); all collected by E. W. Oates, the second clutch coming to the museum via the Crowley Colln., the third via the Seebohm Colln. The first two eggs and the last one might be referable to the same clutch.

Psittacula krameri krameri 31.0 × 21.5, 29.0 × 22.1, 31.0 × 21.5, April 1911; laid in captivity, Munt Colln. (1941.3.1.817–818, 1921.5.30.18).

Psittacula alexandri abbotti 29.3 × 24.5, 29.6 × 24.6, 18th February, 1906, Andaman Islands (1909.10.28.139–140); 31.9 × 24.3, 29.6 × 24.6, 29.0 × 24.1, 25th February, 1906; Andaman Islands (1909.10.28.141–143); both clutches taken by B. B. Osmaston.

Psittacula caniceps 38.2 × 25.6, laid in captivity, Munt Colln. (1962.1.664).

Alisterus amboinensis amboinensis 37.2 × 27.4, 35.6 × 28.1, 33.8 × 28.1, June 1939, laid in captivity, obtained by the Marquis of Tavistock (1939.7.1.1–3).

Alisterus amboinensis sulaensis 34.2 × 25.2, 32.5 × 26.1, 31.5 × 25.5, 33.0 × 24.9, 30th June, 1925 (1925.7.2.3–6); 31.5 × 25.9, 31.0 × 24.1 (1926.5.18.1–2); all laid in captivity at Woburn, Bedfordshire, England, obtained by the Marquis of Tavistock.

Agapornis pullaria ugandae 21.1 × 16.6, 21.5 × 16.7, 21.4 × 16.6, 21.9 × 16.8, 21.3 × 16.8, 10th April, 1940; near Entebbe, Uganda, altitude 3,850 ft. (1960.5.6); 21.0 × 17.3, 21.2 × 17.2, 20.9 × 17.1, 21.3 × 17.3, 21.1 × 17.5, 2nd June, 1941, near Entebbe, Uganda, altitude 3,900 ft. (1960.5.7); both clutches collected by C. R. S. Pitman.

At both nests the identification was confirmed by watching the birds. The first clutch was noted as being a few days incubated, and the second as incubation "advanced".

The first nest was described as "an excavation, thickly lined with small pieces of torn grass leaves: in a tree termites' nest, 10 ft. above the ground, termites still in occupation. Termite mound almost concrete hard".

The second nest was "In hole excavated in tree termites' mud nest 16 ft. above the ground, in fork of large tree, in thicket on rocky hillside. Thickly lined with a pad of small pieces torn out of grass leaves".

Loriculus philippensis chrysonotus 15.5 × 13.7, laid in captivity, Munt Colln. (1962.1.652).

Loriculus philippensis worcesteri 18.7 × 16.4, 19.0 × 16.7, 18.4 × 16.2, 22nd May, 1922, laid in captivity, obtained by the Marquis of Tavistock (1932.5.2.1–3).

Loriculus exilis 19.6 × 15.7, 19.5 × 15.1, 18.9 × 14.3, 1878, laid in captivity, Munt Colln. (1941.3.1.854).

Psephotus chrysopterygius dissimilis 22.7 × 19.4, 22.5 × 17.5, October 1915, laid in captivity, Munt Colln. (1941.3.1.881); 22.0 × 19.0, April 1919, laid in captivity, G. M. Mathews Colln. (1949.10.185); 23.0 × 17.5, 21.9 × 17.5, 3rd January, 1933, laid in captivity, obtained by the Marquis of Tavistock (1933.1.1.2–3).

Eunymphicus cornutus uvaeensis 31.2(?) × 19.7 (tip damaged), laid in captivity, Munt Colln. (1962.1.646).

A specimen of *Locustella luscinioides* from western Arabia in the collection of the British Museum (Nat. Hist.)

by P. R. Colston and D. T. Holyoak

Received 9th January, 1970

Meinertzhagen (*Birds of Arabia*, 1954) lists several records of the occurrence of the River Warbler *Locustella fluviatilis* in western Arabia, including a bird collected on 2nd March, 1948, at Sail Kebir. On examining this specimen (which came to the Museum as part of the Meinertzhagen Collection) we realised that it had been misidentified, and was in fact a Savi's Warbler *L. luscinioides*, a species that hitherto does not appear to have been recorded from Arabia. There are, however, several correctly identified specimens of *L. fluviatilis* from Arabia in the British Museum (Nat. Hist.) Collection.

The misidentified specimen is unsexed and appears to be in fresh plumage. It clearly shows the olive-brown back and light underparts characteristic of the TransCaspian subspecies *L. l. fusca*. The measurements of the skin are: wing, 70.5 mm.; tail, 65 mm.; tarsus, 21 mm.; bill from skull, 16.5 mm.

We are grateful to Derek Goodwin for confirming that it is *L. luscinioides*, and that it shows the characters of *L. l. fusca*.

Some notes on autumn migrants in Morocco

by G. Bundy

Received 7th January, 1970

K. D. Smith (pers. comm.) has pointed out that there are no written accounts of migrants, or the lack of them, in the desert south of the High Atlas in autumn. According to Moreau (1961, Ibis 103a; 373–427, 580–623), migrants would be scarce on the desert fringe; and from a journey from Ouarzazate to Bouanane and back, about 500 miles, between 24th and 27th September, 1969, I can confirm this. However, owing to the apparent lack of published notes, even a largely negative account seems worthwhile recording. Special searches were made in oases and bushy wadi-beds for trans-Saharan migrants, which are recorded below. A few coastal records are added where relevant, or where they add anything to the full treatment given by K. D. Smith (1965, Ibis 107; 493–526).

The weather during the period 24th – 27th September was mainly anticyclonic, as would be expected, with maximum temperature averaging 28° C, and minimum 10° C. On the 24th low cloud formed and there was a four-hour spell of quite heavy rain east of Ouarzazate, which quickly flooded many normally dry wadi-beds. The following two days were cooled by a fresh to strong south-east wind, which caused local dust-haze.

Egrettagarzetta Little Egret. Three at Bouanane, 26th September.

Circus aeruginosus Marsh Harrier. One, possibly a migrant, circled up from Skoura oasis early on 25th September, and on gaining considerable height made off south-west across the desert.

Charadriiformes. Desert crossings are fairly well substantiated for many waders. One each of the following was seen on the wadi at isolated Bouanane, 26th September: *Charadrius dubius*, *Gallinago gallinago*, *Calidris minuta*, *Tringa totanus*, *T. hypoleucos*, *Philomachus pugnax*, *Himantopus himantopus*, and three *Tringa ochropus*.

Larus genei Slender-billed Gull. An adult at Larache, 29th September. Smith recorded only two in 15 months.

Sterna bengalensis Lesser Crested Tern. Two on the beach at Tamri, 21st September. Smith did not see any south of Casablanca. Unless these birds were vagrants, it suggests this species must winter somewhere off West Africa. On the Tripoli coast (*Bull. Brit. Orn. Cl.*, 1969: 152) I have seen a fairly heavy passage in June, from west to east.

Cuculus canorus Cuckoo. An immature at Tamri, 21st September.

Apus apus Swift. One with Swallows going south-east near Boulmalne, 25th September; two also with Swallows same day near Ksar es Souk. One at Bouanane, 26th September.

Apus melba Alpine Swift. One near Ksar es Souk, 25th September, was the only one seen south of the Atlas. It was still very numerous at Fez and Meknes on 29th September.

Apus affinis Little Swift. In view of the recent notes in British Birds, 62, 337–339, it seems worth recording that I only encountered *A. affinis*, and saw no *A. caffer*, although I was looking for the latter and travelled widely in Morocco.

Coracias garrulus Roller. Smith saw none on the west coast, but quotes Vaughan (1960, Ibis; 330–332), who saw six. I saw one leave the Spanish coast at Tarifa, 16th September, and cross the Straits, and a single immature at Asilah, 40km. south of Tangier, on 17th September.

Merops apiaster Bee-eater. South of the Atlas, small flocks were often seen or heard going over south, all along the desert fringe. A party of 20 quickly descended to an oasis east of Ouarzazate during a sudden rain storm on 24th September.

Hirundines. Smith saw few Swallows (*H. rustica*) in autumn south of Oualidia on the coast, and even fewer *Delichon urbica* and *Riparia riparia*. I saw hundreds passing south near the coast between Mogador and Cap Rhir on 21st and 22nd September; all were *H. rustica* except for 10 *R. riparia*. Over the semi-desert plains east of Taroudant on 22nd September there was another strong passage of Swallows over a broad front. These were descending from a crossing of the High Atlas just to the north and making their way south and south-west. Along the desert edge hirundines were encountered in more isolated concentrations: 50 in three flocks north of Ouarzazate on 24th September, 50 east of Boulmalne, 25th September. The same day at Ksar es Souk further east a bunch consisted of 20 Swallows, three House Martins, three Sand Martins, and a Red-rumped Swallow (*H. daurica*), all presumably migrants. Over 50 *H. rustica* passed south at Bouanane, 26th September.

Lanius senator Woodchat Shrike. An adult at Mogador on 21st September. Adults would appear to be rare after August in southern Europe. My latest date in Libya over three years being 8th August. Immatures were scattered down the west coast, and one in the desert at Tinejdad on 25th September.

Sylvia borin Garden Warbler. On the desert fringe only one, at Tinejdad, 25th September. At Cap Rhir at dawn on 22nd September 18 were located in one bush.

Sylvia cantillans Subalpine Warbler. Along the desert edge; one at Skoura, 24th September; six at Koum, 20km. west of Tinerhir, and two just east of Tinerhir on 25th September. One at Bouanane, 26th September.

Muscicapa striata Spotted Flycatcher. One in a wadi near Skoura, 24th

September, one at El Kelaa, one at Boulmalne, and one 20 km. west of Tinerhir, 25th September.

Saxicola rubetra Whinchat. One in a bushy wadi west of Skoura, 24th September.

A collection of birds from the Nyika Plateau, Zambia

by R. J. Dowsett

Received 3rd January, 1970

Between 14th and 24th November, 1969, I collected 167 birds of 62 species, and observed a further 30 species, in the small Zambian portion of the montane Nyika Plateau. One of these species is new to Zambia (*Cryptospiza reichenovii*) and others appear to be previously unrecorded from the Zambian side of the high Nyika or present breeding data for the first time in Zambia. These records are detailed below, together with some miscellaneous observations. All birds collected or ringed and released were weighed, and weights are given in the appendix.

Collecting was carried out in the Chowo Forest (10° 36′ S, 33° 41′ E) between about 6,850 and 7,000 feet above sea level, and at the headwaters of the Chire Stream near the present Zambia Rest House (10° 35′ S, 33° 42′ E) from about 6,850 to 7,100 feet. All specimens are now in the collection of the National Museum of Zambia at Livingstone (N.M.Z.).

Ardeola ibis: Five seen at the Rest House in April, 1955, by R. I. G. Attwell (in Rest House visitors' book). There seem to be no other records above 5,000 feet for Zambia or Malawi.

Trigonoceps occipitalis: An adult seen at 7,000 feet on 14th November is apparently the first definite Nyika record.

Milvus migrans parasitus: ♂, with enlarged testes, 21st November, at 7,000 feet. Its stomach contained an example of the diurnal murid *Rhabdomys pumilio* (identified by W. F. H. Ansell). There is previously a single sight record of the species (subspecies undetermined) at 6,500 feet (Benson *et al.*, in press).

Elanus caeruleus: Occurs commonly to 7,100 feet, and on the Malawi side to at least 7,400 feet. The stomach of one, too damaged to preserve, contained a *Rhabdomy pumilio* (identified by Ansell).

Burhinus capensis: One seen near the Rest House at 7,000 feet, at 08.00 hours on 22nd November. Talbot (1968: 26) records one as high as about 8,000 feet on the Malawi side of the Nyika, but otherwise in Malawi it occurs only to 5,000 feet (Benson, 1953: 31), and there is only one record from the Eastern Province of Zambia (Tree, 1969: 201).

Apus caffer: ♂, ♀, with small gonads, out of eight roosting under the eaves of the Rest House at 7,000 feet. Frequently indulging in display flights during the day. Also obtained on the Malawi side of the Nyika at 7,000 feet in December (Benson, 1953: 47).

Schoutedenapus myoptilus: One seen 18th November in flight over grassland and isolated forest patches at 7,100 feet. There are previous sight records in December at 6,500 feet (Benson *et al.*, in press), but no Zambian specimens.

Pogoniulus leucomystax: ♀, containing a yolking oocyte, 22nd November, forest edge at 7,000 feet.

Smithornis capensis: ♂, with enlarged testes, 21st November, edge of Chowo Forest at 7,000 feet. Previous Zambia and Malawi records are all from below 5,000 feet.

Motacilla flava: ♂, 16th November, in short grassland at 7,000 feet. A first year bird of indeterminate subspecies. Apparently the first Nyika record.

Motacilla aguimp: An immature seen 14th November at the Rest House at 7,000 feet, and an adult seen 20th November at Chelinda Camp in Malawi at 7,350 feet. The first Nyika records, and perhaps occasioned by the increase in human habitation on the Plateau in recent years.

Pycnonotus barbatus: 2♂, ♀, both males with greatly enlarged testes, in bracken-briar at 6,850 to 7,000 feet. Benson *et al.* (in press) give no records from above 6,500 feet and consider it absent from the high Nyika, but it was also noted at Chelinda Camp in Malawi at 7,350 feet, on the edge of pine plantations. It is certainly scarce at higher levels, though. The birds collected are referable to the race *naumanni*.

Andropadus tephrolaemus: 3♂, 2♀, one male with enlarged testes, and three juveniles (one not preserved) estimated to be from eggs laid September (2) and October (1).

Melaenornis chocolatina: 2♂, one with enlarged testes; a weak-flying juvenile seen on 18th November was probably from an egg laid in October.

Batis capensis: 3♂, 5♀; 3♂ with enlarged testes, and one juvenile probably from an egg laid September.

Trochocercus albonotatus: 3♂, 2♀; one male with enlarged testes, and a juvenile probably from an egg laid August.

Turdus gurneyi: 2♂, both with greatly enlarged testes, 15th November, in ground stratum of Chowo Forest at about 7,000 feet.

Chloropeta natalensis: 2♂. *Chloropeta similis:* 2♂. Previously recorded alongside each other on the Zambian side at 6,700 feet (Keith & Vernon, 1966: 120), these sibling species were found within a few yards of each other in riparian bracken-briar at 7,000 feet.

Sylvia atricapilla: ♂ (also 2♂ ringed and released). These three birds were netted on forest edge at 7,000 feet from 18th November, in the same area as previous December and January records. It is evidently regular in the area, and in comparison five *Sylvia borin* were caught and ringed during the same period, all in bracken-briar below 7,000 feet.

Hirundo angolensis: ♂, testes enlarged (also nine were ringed and released). Nesting at Rest House at 7,000 feet; two occupied nests under eaves contained pulli from eggs laid October and November respectively.

Hirundo daurica: 2♂, both with gonads much enlarged (also two ringed and released). From behaviour doubtless soon to nest under the eaves of the Rest House at 7,000 feet.

Psalidoprocne albiceps: Up to four seen daily to 7,100 feet, feeding along forest edge. Previously reported in the same area in December by J. M. Feely (in Rest House visitors' book), and on the Malawi side once at 7,800 feet (Benson, 1953: 65).

Tchagra senegala: Commonly seen and heard in bracken-briar 6,950 to 7,100 feet, apparently replacing *Tchagra minuta*, recorded in similar habitat to as high as 6,300 feet. Benson *et al.* (in press) record a few from 6,000 and 6,700 feet, and on the Malawi side Benson (1953: 67) records it up to 6,500 feet.

Laniarius ferrugineus: ♀, with small gonads, 14th November, in riparian forest remnant at 7,000 feet. Only one other bird was seen in the area (in the mid-stratum of introduced pine trees), but it has been noted frequently at 6,700 feet, and on the Malawi side is reported as high as 7,800 feet (Benson *et al.*, in press). It occurs alongside *Laniarius fuelleborni* (♂, 3♀), although probably only *fuelleborni* occurs in the interior of montane forest.

Corvus albus: Seen occasionally at the Rest House at 7,000 feet (where *Corvus albicoills* also occurs), and at Chelinda Camp in Malawi at 7,350 feet. These are the first Nyika records, and are perhaps occasioned by the increase in human habitation on the Plateau in recent years.

Cinnyricinclus leucogaster: Up to four were seen daily at 7,000 to 7,100 feet in scattered trees in grassland, and Benson *et al.* (in press) give two records from 6,700 feet.

Serinus canicollis: ♂, 2♀; two juveniles from eggs laid September and October respectively. The species was scarce, only two or three others being seen. Benson & Irwin (1967: 124) suggest that birds may leave the Nyika Plateau for lower levels from about late December.

Three other species of *Serinus* were found in the same immediate area at 7,000 feet, although for two of them (*sulphuratus* and *citrinelloides*) Benson *et al.* (in press) give records only to 6,500 feet and at 6,200 feet, respectively. *Canicollis* and the larger *sulphuratus* (♂, ♀, male with enlarged testes) are usually in open grassland with bushes, although the former does occasionally wander into bracken-briar. *Citrinelloides* (♂, 2♀) and the larger *striolatus* (♂, ♀) appear confined to bracken-briar.

Euplectes psammocromius: ♂, testes enlarged. A few other males in full breeding dress were seen in the area, in short grassland and bushes to 7,000 feet.

Mandingoa nitidula: ♂, in immature plumage, but with skull ossification complete, 24th November, in ground stratum of Chowo Forest at about 7,000 feet. Previously recorded in the eastern highlands from the Mukutu Mountains below 6,000 feet (Benson, 1949: 60), and similarly in Malawi apparently not above 6,000 feet (Benson, 1953: 79).

Cryptospiza reichenovii: ♂, testes small, N.M.Z. no. NH/16/1, 24th November, Chowo Forest, stream with tree ferns in centre of interior at about 6,900 feet. The first Zambian specimen, although there is a previous sight record from Chowo by Jali Makawa, and it is not uncommon on the Malawi side of the Nyika.

Benson *et al.* (in press) discuss the known altitudinal ranges of species on the Nyika Plateau; the present collection necessitates amendments to their data in respect of a number of species. In addition to species discussed above, the following are now all recorded up to 7,000 feet, those marked with an asterisk (*) being based on collected material in N.M.Z.:

Buteo rufofuscus, *Stephanoaetus coronatus**, *Francolinus hildebrandti**, *Turtur tympanistria**, *Cuculus solitarius*, *Colius striatus**, *Merops apiaster*, *Tockus alboterminatus**, *Phyllastrephus flavostriatus**, *Muscicapa adusta**, *Phylloscopus trochilus**, *Cisticola cantans**, *Hirundo senegalensis*, *Lanius collaris**, *Malaconotus multicolor*, *Nectarinia verticalis**, *Lagonosticta rubricata**.

ACKNOWLEDGMENTS

This expedition was sponsored by the National Museums of Zambia, and I am grateful to the Director, Dr. L. Holy, and to the Keeper of Natural History, Mr. C. Cross, for supplying a vehicle, driver and other equipment, and for the secondment of a skinner for three years. I should like to thank the President of the Wild Life Conservation Society of Zambia, Lt.-Col. R. A. Critchley, D.S.O., M.C., for granting me special leave of absence. I am especially grateful to the other members of the expedition for their assistance, especially Messrs. W. F. H. Ansell (mammalogist), Aaron Muchindu (skinner) and N. Rosenburg (student). The Surveyor-General, Zambian Government, kindly loaned me an altimeter. Messrs. C. W. Benson and M. P. Stuart Irwin have kindly read a draft of this paper.

References:

Benson, C. W., 1949. Notes from the Lundazi District, Northern Rhodesia. *Bull. Brit. Orn. Cl.* 69: 58–60.

Benson, C. W., 1953. *A Check List of the Birds of Nyasaland.* Blantyre and Lusaka: Joint Publications Bureau.

Benson, C. W., Brooke, R. K., Dowsett, R. J. and Irwin, M. P. S. In press. Further notes on the birds of Zambia. *Arnoldia* (*Rhodesia*).

Benson, C. W. and Irwin, M. P. S., 1967. A Contribution to the Ornithology of Zambia. *Zambia Mus. Papers* 1: 1–139.

Keith, S. and Vernon, C., 1966. Notes on African warblers of the genus *Chloropeta* Smith. *Bull. Brit. Orn. Cl.* 86: 115–120.

Talbot, J., 1968. A visit to the Nyika Plateau, Malawi. *Honeyguide* 56: 25–26.

Tree, A. J., 1969. The status of Ethiopian waders in Zambia. *The Puku* 5: 181–205.

APPENDIX: Weights of birds collected or ringed, Nyika Plateau, November, 1969.

Elanus caeruleus	? sex (1): 211.0
Milvus migrans	♂ (1): 650.0
Francolinus hildebrandti	♂ (1): *320.0*
Columba arquatrix	♂ (3): 360, 400, 415.0 ♀ (1): 350.0
Turtur tympanistria	♂ (1): 64.0 ♀ (1): 68.0
Tauraco persa	♀ (1): 305.0
Tockus alboterminatus	♂ (1): 224.0
Caprimulgus poliocephalus	♂ (2): 40.0, 44.0 ♀ (2): 40.0, 43.0
Apus caffer	♂ (1): 21.3 ♀ (1): 22.1
Colius striatus	♀ (1): 50.0
Apaloderma vittatum	♂ (2): 56.0, 56.0 ♀ (1): 57.0
Pogoniulus leucomystax	♀ (1): 11.2
Mesopicos griseocephalus	♀ (1): 44.0
Smithornis capensis	♂ (1): 24.0
Mirafra africana	♂ (1): 51.0
Motacilla flava	♂ (1): *17.0*
Anthus novaeseelandiae	♂ (2): 26.8, 29.4 ♀ (1): 25.5
Pycnonotus barbatus	♂ (2): 40.0, 40.5 ♀ (1): 35.0
Phyllastrephus flavostriatus	♂ (2): 29.2, 29.5 ♀ (1): 27.5
Andropadus tephrolaemus	♂ (3): 33.0, 34.0, *36.0* ♀ (2): 29.5, *31.0*
Muscicapa adusta	♀ (1): 11.1
Melaenornis chocolatina	♂ (2): 26.8, 29.9
Batis capensis	♂ (3): 10.8, 11.0, 12.4 ♀ (5): 10.9 (11.9) 13.5
Trochocercus albonotatus	♂ (3): 7.1, *8.0*, 8.6 ♀ (2): 7.4, 8.0
Turdus abyssinicus	♂ (1): 65.0
Turdus gurneyi	♂ (2): 53.0, 56.0
Saxicola torquata	♂ (1): 15.2 ♀ (1): 15.7
Cossypha caffra	♂ (4): 25.0 (26.6) 28.7
Alethe fuelleborni	♂ (2): 46.0, 46.0 ♀ (1): 44.0
Alethe anomala	♂ (3): 20.4, 23.9, 24.1 ♀ (1): 21.6
Pogonocichla stellata	♂ (4): 15.2, *15.6*, *15.8*, 18.6 ♀ (2): 16.5, 19.4
Sylvia borin	? (5): 18.3 (19.7) 23.1
Sylvia atricapilla	♂ (3): 17.0, 17.9, *18.8*
Chloropeta natalensis	♂ (2): 11.6, 13.0
Chloropeta similis	♂ (2): 12.1, 12.1
Phylloscopus trochilus	? (2): 7.1, 7.3

Bradypterus cinnamomeus	♂ (2): 17.1, 17.5 ♀ (2): 18.0, 18.8
Bradypterus mariae	♂ (1): 19.2 ♀ (3): 16.1, 16.8, 18.4
Apalis thoracica	♂ (2): 12.0, 12.5 ♀ (2): 11.8, 13.0
Cisticola lais	♂ (1): 14.8
Cisticola njombe	♂ (3): 11.4, 11.8, 12.1 ♀ (2): 9.5, 10.9
Cisticola hunteri	♂ (2): 23.2, 23.9 ♀ (2): 19.5, 20.0
Cisticola cantans	♂ (2): 17.0, 17.2
Hirundo rustica	? (1): *19.7*
Hirundo angolensis	♂ (1): 19.1 ? (9): 15.7 (17.7) 19.0
Hirundo atrocaerulea	♂ (1): 13.1
Hirundo daurica	♂ (2): 26.0, 31.0 ? (2): 26.0, 31.0 (*sic*)
Lanius collaris	♂ (1): 44.0
Laniarius ferrugineus	♀ (1): 44.0 (*sic*)
Laniarius fuelleborni	♂ (1): 48.0 ♀ (3): 37.0, 41.5, 47.0
Zosterops senegalensis	♂ (5): 8.9 (9.5) 10.7 ♀ (1): 10.2
Nectarinia kilimensis	♂ (1): 16.1 ♀ (1): 13.6
Nectarinia afra	♂ (3): 8.3, 8.8, 9.6 ♀ (3): 8.0, 8.1, 8.6
Nectarinia mediocris	♂ (3): 8.1, 8.6, 8.6 ♀ (5): 7.0 (7.5) 8.0
Nectarinia verticalis	♂ (1): 13.9
Ploceus baglafecht	♂ (1): 33.0
Euplectes psammocromius	♂ (1): 35.5
Cryptospiza reichenovii	♂ (1): 13.2
Mandingoa nitidula	♂ (1): *8.7*
Lagonosticta rubricata	♂ (3): 9.0, 9.1, 9.8 ♀ (3): 8.6, 10.0, 10.6
Estrilda melanotis	♂ (2): 5.8, 6.1 ♀ (2): 7.0, 7.5 ? (1): 6.7
Estrilda astrild	♂ (3): 6.7, 7.4, 7.5
Serinus sulphuratus	♂ (1): 23.4 ♀ (1): 20.4
Serinus citrinelloides	♂ (1): 12.6 ♀ (2): 12.7, 13.6
Serinus canicollis	♂ (1): *11.3* ♀ (2): *13.3*, 14.0
Serinus striolatus	♂ (1): 20.3 ♀ (1): 20.2

(Note: All weights are in grams. Weights of juvenile or immature birds are in italics, otherwise all are of adult birds. Where there are weights of more than three birds data are shown in the order sex (sample): minimum (mean) maximum.)

Birds in the central Sahara in winter

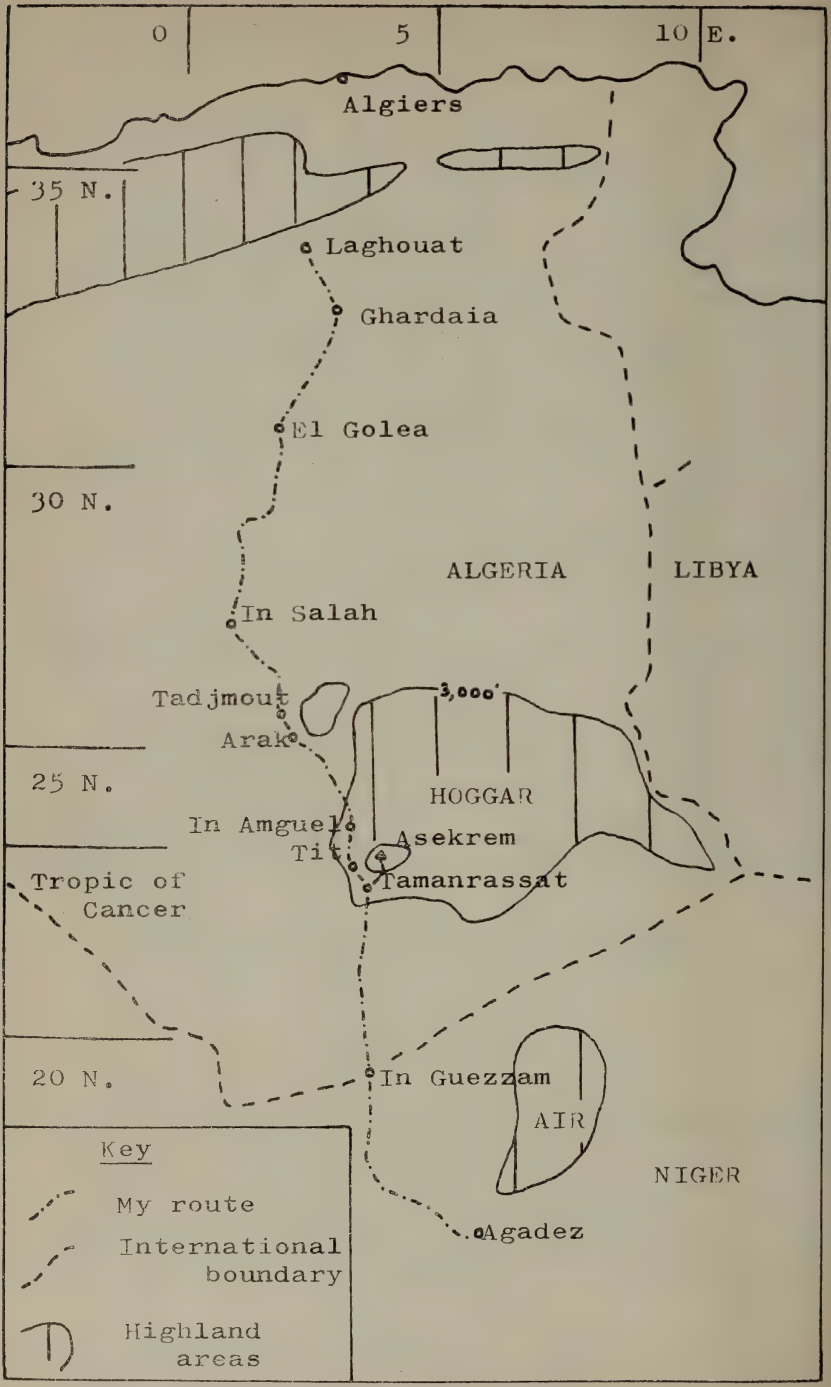
by A. J. Gaston

Received 20th October, 1969

INTRODUCTION

This paper is compiled from observations made whilst crossing the central Sahara. The route followed was identical to that followed by Meinertzhagen (1934) in 1931 except that I continued on southwards after visiting the Hoggar, entering the southern Sahel belt in Niger. Observations were made between 31st January and 24th February, 1968, and during this period three days were spent at Ghardaia, an oasis on the northern edge of the desert, two days at In Salah, and sixteen days in the highland region of the Hoggar Mountains, of which nine were spent camping at 8,700 feet on Asekrem Mountain.

Many of the observations made coincide very closely with those of Meinertzhagen, who travelled at the same time of year. All species noted between Ghardaia and the edge of the Sahel belt are listed in the systematic list but no


0
5
10 E.
Algiers
35 N.
Laghouat
Ghardaia
El Golea
30 N.
ALGERIA
LIBYA
In Salah
Tadjmout
Arak
3,000'
25 N.
HOGGAR
In Amguel
Asekrem
Tit
Tropic of Cancer
Tamanrassat
20 N.
In Guezzam
AIR
NIGER
Agadez
Key
My route
International boundary
Highland areas

comment is appended where the status of the species was similar to that recorded in 1931.

ECOLOGICAL BACKGROUND

The habitats can be categorised as follows:—

a) Oases. Here the vegetation was predominantly planted by man and dominated by date palms and tamarisk trees; with a variety of crops, all maintained largely by irrigation.

b) Desert. In some places, particularly on the Tademait plateau, north of In Salah, vegetation was entirely absent with flat dark-brown "hamada" desert covering the ground unbroken for miles on end. This type of desert is paved with sand-blasted pebbles. South of In Salah, occasional oueds (dry watercourses) supported a vegetation of tufted grasses and stunted *Acacia* bushes. South of Tamanrassat the desert is again very flat but it is not paved with pebbles. Instead the surface is mainly greyish or yellowish dust, which in places forms small crescentic dunes. The oueds are always lined by sand or silt. The "Route du Hoggar" passes between the two great sand seas of the Algerian Sahara and these were seen only briefly, just north of El Golea.

c) The Hoggar Mountains. The upland area consists of a plateau of geologically old rocks, in the centre of which stand the remains of a range of ancient volcanoes, forming the central highlands. This area, particularly the central highlands receives more or less regular rainfall; about 5 cm per annum; and supports a sparse vegetation of Mediterranean affinities. Above 6,000 feet this consists mainly of xerophytic shrubs, with small trees and thick clumps of shrubby Umbelliferae in the water-cut gorges.

The plateau region is nowhere so barren as the surrounding desert and is traversed by numerous large oueds supporting scattered acacias and tamarisk bushes. There are a number of oases on the edge of the uplands, of which I visited In Amguel, Tit and Tamanrassat. The latter is the most important, although all the water for irrigation is obtained by pumping. At the other two, and at the Arak gorge on the northern edge of the uplands, there are surface streams.

The northern Sahara, at the end of January, is extremely cold. At night the temperature falls well below freezing, and at mid-day it rarely rises above 15°C, even in the sun. This applies to both the oases and the open desert, although Ghardaia, being situated in a deep, sheltered oued, is probably warmer during the day.

The climate of Tamanrassat in mid-February was cool at night but day time temperatures rose to 30°C in the sun. In the central highlands, at 9,000 feet, temperatures on 10th–14th February ranged from −4.5°C to 31°C. At 1800 hours, just after sunset, the temperature had already fallen to 6°C and shade temperatures never rose above 15°C.

It can be seen from the climatic data given above that conditions for the wintering of European migrants in the oases of the northern Sahara are scarcely an improvement over conditions on their breeding grounds at this season. Most of the migrants encountered were in fact species which do winter in parts of their European range.

SYSTEMATIC LIST

The order and nomenclature follow Vaurie (1959–65)

Chersophilus duponti. Dupont's Lark

One party of six seen feeding on barren stony ground on the edge of the oasis at Ghardaia.

Calandrella cinerea. Short-toed Lark

On 23rd February, on the extreme southern edge of the Sahara, where patches of dry grass began to appear on the flat desert, several flocks of more than 100 birds were encountered.

Ammomanes deserti. Desert Lark

First seen on 1st February on the edge of Ghardaia oasis and recorded thereafter at all oases or well-vegetated oueds in the desert north of the Hoggar and also throughout the upland region. Not recorded south of Tamanrassat.

Ammomanes cinctura. Bar-tailed Desert Lark

First seen on 3rd February a few km south of El Golea and recorded only in the desert north of In Amguel. On several occasions the species was seen in full desert, apparently at least several score of km from the nearest water. Not recorded at oases at all.

Alaemon alaudipes. Hoopoe Lark

One was seen near a small artificial pool 150 km north of El Golea on 2nd February.

On 23rd February, about 80 km south of In Guezzam on the southern edge of the desert, the species seemed relatively abundant, one or two being seen every few km beside the track. It continued to be numerous as far south as the northern edge of the Acacia scrub at about 180 km south of In Guezzam.

Eremophila bilopha. Temminck's Horned Lark

One seen near a small artificial pool 150 km north of El Golea.

Hirundo obsoleta. Pale Crag Martin

First seen on 6th February at Tadjmout, a small spring at the foot of rocky hills on the northern edge of the Hoggar uplands. Seen throughout the highland region up to the summits of the volcanoes at about 9,000 feet. Particularly numerous in the narrow well-vegetated gorges of the central highlands, and also around the oases. One was seen in full desert at an oued 80 km south of Tamanrassat, and several at the tiny oasis of In Guezzam. In both places the birds were feeding over flat desert. In Tamanrassat the birds often fed around the buildings.

Delichon urbica. House Martin

Six were present over the small trickle of water in the oued at Ghardaia on 2nd and 3rd February.

Anthus pratensis. Meadow Pipit

A party of six was seen feeding on an irrigated field at Ghardaia on 2nd February. On 14th February one was seen beside a small rock pool at about 7,000 feet in the central Hoggar.

Anthus spinoletta. Water Pipit

One seen beside the oued at Ghardaia on 3rd February.

Motacilla alba. White Wagtail

This species was recorded wherever there was any surface water. At least 50 were present at Ghardaia, six at In Salah, two at Tadjmout, three at In Amguel, and 50–60 at Tamanrassat. The species was not recorded in the central Hoggar, however.

Lanius excubitor. Great Grey Shrike

About 20, including several singing males, were seen around the oasis at Ghardaia where they perched mainly in palm trees. One was seen at Tit on the Hoggar plateau, and five at Tamanrassat where all were in Acacia bushes in the oued outside the main oasis. Meinertzhagen recorded this species up to 6,500 feet in the central Hoggar.

South of the desert the species was also common on the northern fringe of the thornbush savanna, appearing as soon as bushes became abundant.

Hippolais pallida. Olivaceous Warbler

Two seen at In Salah. At Tamanrassat the species was numerous, particularly among the avenues of tamarisk trees. Many males were in song but no evidence of nesting was obtained. A single bird was seen in a waterless oued just south of Tamanrassat on 22nd February.

Sylvia atricapilla. Blackcap

One male singing at Ghardaia on 2nd February.

Sylvia melanocephala. Sardinian Warbler

Three seen at In Salah among palms. Very numerous at Tamanrassat where many males were singing, occurring in tamarisks, citrus groves, date palms and thorn scrub but not seen at higher altitudes. Three seen in a waterless oued just south of In Guezzam on 23rd February. Not recorded south of the desert.

Sylvia conspicillata. Spectacled Warbler

One recorded at Ghardaia on 1st February feeding in rank vegetation beside a sewage outflow.

Sylvia nana. Desert Warbler

Recorded near the northern end of the Arak Gorge but nowhere else in the Hoggar.

Sylvia deserticola. Tristram's Warbler

One male seen at 7,000 feet in the central Hoggar amongst tall vegetation in a gorge.

Phylloscopus collybita. Chiffchaff

Recorded at Ghardaia where two were singing on 2nd February and a further 20 were seen feeding mainly along the banks of the stream in the oued.

South of Ghardaia Chiffchaffs were recorded wherever surface water was available; at El Golea, In Salah, Tadjmout and throughout the Hoggar massif. They extended up to 8,000 feet in the central highlands and were found particularly near pools in the deeper gorges. At Tamanrassat they were found in all types of vegetation but were particularly numerous feeding on the ground in the irrigated grass fields. They seemed to form loose flocks of between 5 and 20 birds moving steadily through fields and orchards in a manner reminiscent of autumn tit-parties in English woodlands.

Saxicola torquata. Stonechat

One recorded at Ghardaia on 1st February.

Oenanthe leucopyga. White-crowned Black Wheatear

Recorded throughout the journey at all oases, also on rocky outcrops and in dry oueds in full desert, and at all altitudes up to the highest peaks of the Hoggar. It was not seen in flat open desert and appeared to require rocks or bushes to use as perches. It appeared to be completely independent of water.

Counts of white and black crowned forms are detailed below. In general black crowned birds were more common in the north, and white crowned in the south, particularly in the high Hoggar.

	February		May	
	White	Black	White	Black
La Ghardaia	3	14	7	4
Fort Miribel (south of El Golea)	2			
Tadjmout	2			
Arak gorge	2	3		
Im Amguel	5	1		
Tamanrassat	5	6		
Hoggar 3–5,000 feet	13	1		
Central Hoggar	46	2		
Desert south of Tamanrassat	1	1		

The above figures utilise only counts made specifically for this purpose where all birds seen over a certain period were noted. The higher proportion of black headed birds in the oasis of Tamanrassat compared with the surrounding desert is interesting. The count in May was made by J. W. Patterson.

Those *Oe. leucopyga* seen in full desert south of Tamanrassat, where the mid-day temperatures approached 50°C in the shade, spent the hottest period perched in the lowest branches of Acacia bushes, feeding by means of sudden sallies at insect life on the ground. At this time of day they were never seen to perch in full sunlight.

At the beginning of February birds were often seen singing in the central Hoggar but there was no evidence of nesting and general behaviour suggested that most of the birds present were males. Song began at 04.45 (sunrise 06.00 local time) and was very strong between 05.00 and 06.00. Another burst in the evening continued until an hour after sunset (18.05).

One *Oe. leucopyga* seen near In Guezzam had an upper mandible which was several millimetres longer than the lower and strongly decurved. This was the southernmost member of the species recorded.

Oenanthe deserti. Desert Wheatear

One just on the edge of the oasis at Tamanrassat on 21st February.

Oenanthe isabellina. Isabelline Wheatear

One at Tamanrassat on 21st February, one at In Guezzam on 23rd February, and several in the sparse grass on the southern edge of the desert on 23rd and 24th February. The Common Wheatear *Oe. oenanthe* was not encountered until south of Agadez, where Isabelline Wheatears were absent, and it would appear that the wintering area of the latter forms a belt along the southern edge of the desert, to the north of the area occupied by Common Wheatears. Bates (1933) also mentions *Oenanthe isabellina* as wintering in Niger.

Cercotrichas podobe. Black Bush Robin

Two were seen in the oasis of Tamanrassat on 8th February. Both were rather skulking but one fed out in the open under a grove of tamarisk trees for a time. In addition a bird seen briefly at about 7,000 feet in the central Hoggar on 12th February was almost certainly of this species. This tropical African species was not seen by Meinertzhagen and does not appear to have been recorded in the Hoggar previously. It is common on the northern fringe of the bush savanna around Agadez and extends into the Air mountains (Buchanan 1926).

Phoenicurus ochruros. Black Redstart

One male seen at Ghardaia on 1st February.

Turdoides fulvus. Fulvous Babbler

Seemed to be fairly common among irrigated orchards and fields at Ghardaia where at least five were seen. I did not see it in the Hoggar where Meinertzhagen found it common in well-vegetated localities up to 7,500 feet.

Emberiza striolata. House Bunting

Common at Ghardaia, but not recorded at In Salah. Not seen away from oases except in the Hoggar where it was found everywhere where water was available, at all altitudes up to about 8,500 feet. Birds were heard singing at Ghardaia on 1st February.

Rhodopechys githaginea. Trumpeter Bullfinch

Recorded in rocky places throughout the desert where water was available. Common around Tamanrassat but not seen at In Salah where the country is completely devoid of rocks. Birds were seen displaying at Tamanrassat on 18th February.

Birds from the oasis of Tamanrassat roosted communally among rocks about 2 km from the town but did not appear to be joined by birds from the surrounding desert. Flighting took place between 20 minutes to and five minutes after sunset, in parties of up to 15 birds.

Lagonosticta senegala. Senegal Firefinch

Very common around Tamanrassat in parties of up to six, feeding in streets, gardens and orchards, but never far from the houses. They are said by the missionary to have been introduced by a French administrator soon after the war, but Etchécopar & Hüe (1967) make no mention of this. The species was not recorded by Meinertzhagen or Geyr.

Passer domesticus. House Sparrow

Common around houses at Ghardaia and In Salah. Not seen elsewhere.

Passer hispaniolensis. Spanish Sparrow

Recorded at Ghardaia only.

Sturnus vulgaris. Starling

Five seen at Ghardaia on 31st January.

Corvus ruficollis. Brown-necked Raven

Recorded at El Golea and throughout the Hoggar where it rivalled the White-crowned Black Wheatear as the most ubiquitous species. Birds feeding around the oasis at Tamanrassat flew up into the mountains about 8 km away to roost, flighting at about half an hour before sunset.

Struthio camelus. Ostrich

A party of one adult, one immature and seven 18-inch high young were encountered on 23rd February in the sparse grassland on the southern fringes of the desert, about 18°N. Meinertzhagen (1934) considered that the species was not found north of Zinder, and Buchanan (1926) suggested that it might be extinct in the Air. Several other travellers that I met mentioned having seen the species north of Agadez, however, and it appears that it is fairly abundant in the open steppe.

Ciconia ciconia. White Stork

Twelve were present beside a small pool 100 km south of Ghardaia on 2nd February. Seven were present in the oued at Tamanrassat on 20th February. At mid-day on 23rd February a party of 25 descended out of invisibility from a clear sky at In Guezzam. They began to drink from a tiny pool of water some twenty yards long until disturbed, whereupon they took off and circled upward, drifting slightly with the wind, until lost from sight.

The hermits living on Asekrem report February as the main month for stork passage over the Hoggar, and the missionary at Tamanrassat reported "hundreds" passing over on 16th February.

27 APR [illegible]

Milvus migrans. Black Kite

One seen at In Amguel on 7th February.

Buteo rufinus. Long-legged Buzzard

One seen at a completely waterless oued 80 km south of Tamanrassat. Apart from this the species was recorded only in the central Hoggar where at least two pairs were present in the vicinity of Asekrem. Pellets found below a perch contained the remains of Gundis (*Massontiera rothschildi*), small rodents the size of guinea pigs.

Buteo buteo. Buzzard

One seen at Ghardaia on 1st February, hunting over barren screes on the edge of the oasis.

Neophron percnopterus. Egyptian Vulture

Recorded only in the Hoggar where at least three were seen in the vicinity of Asekrem, and at least twelve centred on the oasis at Tamanrassat.

Falco biarmicus. Lanner Falcon

One seen in the central Hoggar on 10th February.

Falco tinnunculus. Kestrel

One seen at Tamanrassat, perched in a tall poplar on 21st February. Meinertzhagen found two pairs in the central Hoggar.

Vanellus vanellus. Lapwing

Four seen at In Salah on 5th February.

Cursorius cursor. Cream-coloured Courser

Several seen on 23rd and 24th February on the southern edge of the desert.

Pterocles coronatus. Coronetted Sandgrouse

A flock of 13 was seen at Tit on 8th February. Several birds seen two days previously, north of Tadjmout, were probably of this species.

Columba livia. Rock Dove

Recorded only in the Hoggar where the local subspecies *C. l. targia* is very distinctive. They were seen only near water and were particularly common in the central Hoggar, where flocks of up to 25 were seen.

A flock of 22 seen feeding on open ground in the central Hoggar were perpetually in motion, moving forward in line abreast at a fast shuffle and covering about a hundred yards in the space of ten minutes. Birds were evenly spaced 6–18 inches apart and kept up a continuous pecking as they moved over the ground.

Streptopelia turtur. Turtle Dove

Very numerous around Tamanrassat. Meinertzhagen (1934) describes it as a summer visitor to the oases of the Hoggar but birds were present and singing on my arrival in Tamanrassat on 9th February. Found mainly around the buildings of the town and otherwise never away from the trees of the oasis.

Streptopelia senegalensis. Palm Dove

Seen at Ghardaia and In Salah.

Caprimulgus sp. Nightjar

One heard singing in the oued above Tamanrassat about an hour after dusk on 18th February. The song was in 3–4 second phrases and seemed indistinguishable from that of *Caprimulgus europaeus.*

Upupa epops. Hoopoe

Two at Tamanrassat on 20th February.

[*to be continued*]

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be listed at the end of a contribution, in the same format as in the notice to contributors to the *Ibis* (see any 1969 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

Contributors are entitled to a maximum of ten free copies of the number of the *Bulletin* in which their contribution appears, provided that it exceeds one page of the *Bulletin*. Extra copies at cost price can be ordered through the Editor at the time of submission of the manuscript.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s.* for years up to 1968 (Vol. 88) and 7*s.* 6*d.* for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s.* (payable in advance) or per copy 7*s.* 6*d.*, payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

5 71

Bulletin of the

British Ornithologists' Club

Edited by

C. W. BENSON

Volume 90 No. 3 June 1970

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, Bt., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

P. F. R. Jackson

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1970

21st July. Speaker: to be arranged. Venue: The Cafe Royal, 68 Regent Street, W.1.

15th September. Speaker: Professor Emil K. Urban. Subject: The bird colonies of Lake Shala, Ethopia. Venue: The Criterion in Piccadilly, W.1.

17th November. Speaker: Mr. Murray Williams. Subject: New Zealand Wildfowl Research and Conservation. Venue: The Criterion in Piccadilly, W.1.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

4 JUN 1970

Vol. 90 No. 3 Published: 20th June, 1970

The six hundred and sixty-fourth meeting of the Club was held at the Criterion in Piccadilly, London, W.1. on Tuesday, 19th May, 1970, at 7 p.m.

Chairman: Dr. J. F. Monk; present: 21 members and 6 guests.

Mr. C. W. Benson addressed the Club on the birds of Aldabra and illustrated his address with coloured slides.

The meeting was preceded by the seventy-eighth annual general meeting of the Club, the minutes of which meeting will be published in a later issue of the *Bulletin*.

Birds in the central Sahara in winter

by A. J. Gaston

(Part II)

Received, 20th October, 1969

DISCUSSION

Several of the species recorded by Meinertzhagen (1934) and Geyr (1917) from the Hoggar I saw only on the southern edge of the desert in 1968. This may be because the Tamanrassat region has had no appreciable rain for six years. This has forced the local Touareg who, in the past, have grazed sheep, goats and camels around the oasis to move either into the central highlands or south to the semi-desert of northern Niger. Cream-coloured Courser, Hoopoe Lark and even Ostrich are species which may move into the Hoggar when rainfall has been high enough to produce some grassland.

The absence of the Brown Babbler in 1968, which Meinertzhagen (1934) described as "common in well-vegetated localities", when he was in the central highlands in 1931, is more difficult to explain. Conditions at above 6,000 feet seem far more stable than at lower altitudes and it is unlikely that the species can have disappeared. It is strange, however, that it is not found at Tamanrassat which provides conditions similar to those found at Ghardaia where it is fairly common. It may be restricted to local pockets, in which case, if sedentary, it may not have had any opportunity of colonising the oasis.

Angus Buchanan, who knew the Sahara as well as anyone of his period, was convinced that the oases of the central Sahara were gradually drying up, and he particularly mentions the disappearance of lions, giraffes and ostriches from the Air since the explorations of Barth in 1851. This process may be resulting in a gradual disappearance of certain species from the other Saharan massifs. The general impression from Meinertzhagen's (1934) account is that birds were more numerous in the central Hoggar when he was there.

This idea is also supported by a comparison of climatic data between 1881–1910 and 1911–1940 which shows that there has been a twenty-five per cent reduction in precipitation between these two periods, in the central Sahara; the greatest reduction anywhere in the old world (Butzer & Twidale, 1966). In marginal environments such as semi-desert country, very slight alterations in climate may have disproportionate effects on the biotic communities, particularly where these are already under pressure owing to other factors such as grazing.

Against this trend towards desiccation may be set the effects of drilled wells used to tap underground water and mechanical pumps for raising it. These factors have led to an increase in the cultivation of some oases; particularly Tamanrassat, and may help in concentrating the wintering bird population driven out of the mountains by encroaching aridity.

Observations on the ecology of birds in the Hoggar Mountains

In the central Hoggar counts of birds drinking at a fairly representative pool were made on 12th, 13th and 14th February. The pool was situated at an altitude of about 7,500 feet and about 3 km from Asekrem (9,000 feet). It was at the lower end of a rocky gorge which contained several similar pools. The surface area was about three square yards. A total of twelve hours watching were spent to compile Table I.

All species drank most frequently between 07.00, an hour after sunrise, and 11.00 hrs. Trumpeter Bullfinches also drank regularly between 13.00 and 15.00 hrs., but for other species drinking became less frequent after midday. Only one Trumpeter Bullfinch and one White-crowned Black Wheatear were seen drinking after 15.30 hrs., although sunset was not until 18.00 hrs.

TABLE I

Numbers of birds recorded drinking—

Ammomanes deserti	50
Phylloscopus collybita	1
Oenanthe leucopyga	6
Rhodopechys githaginea	63
Emberiza striolata	67
Columba livia	22

Observations at the study pool and at others suggest that only those wheatears which held a territory immediately adjacent to a pool visited open water to drink. It would appear that this species is a facultative rather than an obligate drinker therefore.

In order to determine the relative abundance of the most common species in the mountains several sample counts were made. An arbitrary route was followed, keeping at approximately the same altitude, and all birds seen within 200 yards of the path were counted, trying not to count individuals twice. This inevitably produces a bias in favour of more conspicuous species but this probably only applies to the wheatear, the other three species encountered being more or less equally conspicuous and, more important, equally easily disturbed, and all possessing characteristic alarm notes.

TABLE II

Density in numbers per km. of birds seen in three altitude zones.

Species	Altitude zones in ft.		
	A. 7,500–9,000	B. 6,000–7,500	C. 3,500–4,000
Ammomanes deserti	2.17	1.8	0.83
Oenanthe leucopyga	2.17	1.07	1.83
Rhodopechys githaginea	0.17	1.0	3.3
Emberiza striolata	1.0	2.57	0.3
Distance covered in km.	6	14	12

Table II lists the results of counts made in three separate zones in the Hoggar. Counts in zones A and B were made in the central highlands within

6 km of the peak of Asekrem; A between 7,500 and 9,000 feet in the waterless region, and B between 6,000 and 7,500 feet at which altitude rock pools are common. Zone C was the flat bed of an oued above Tamanrassat between 3,500–4,000 feet and without water, except a single small spring.

The figures demonstrate several features which casual observations also support. Bird life is generally more dense in the zones A and B than in C and the high figure for Trumpeter Bullfinch in zone C may be biassed by the inclusion of one large flock of twenty. In particular House Buntings are uncommon.

The differences between zones A and B illustrate how much more dependent the House Bunting and Trumpeter Bullfinch are on water than the other two species. It was always difficult to be certain that all possible sources of water had been located but general observations suggested that in zones A and B House Buntings were never found more than 1 km from water, and Trumpeter Bullfinches rarely more than 3 km. Desert Larks, however, were found up to 6 km from water.

Table III shows zones A and B treated together and compared with the percentage representation in the drinking sample. This suggests a decreasing "thirstiness" in the order Trumpeter Bullfinch, House Bunting, Desert Lark, White-crowned Black Wheatear.

TABLE III

		Ammomanes deserti	*Oenanthe leucopyga*	*Rhodopechys githaginea*	*Emberiza striolata*
Representation in zones A and B	%	32	28	10	30
Representation at pool	%	27	3	34	36

The degree of dependence on water is probably governed by the kind of food eaten and as a general rule an insect diet provides more water than one composed of seeds (Schmidt-Nielson, 1964). This fits in with the fact that Trumpeter Bullfinches were seen to be feeding on seeds whenever their food source could be examined, whereas House Buntings and the Larks were both seen to take flying insects at times, and the wheatears are probably completely insectivorous.

It seems possible that the frequency of drinking by Desert Larks in the Hoggar is abnormally high. Other observers have recorded them very far from water, in full desert, and the frequent drinking seen in the Hoggar may be due to an unusually high intake of seeds in the diet, day-time temperatures in the mountains during the winter being too low to encourage much insect life.

Figure 1 illustrates the importance of mobility to the supposedly sedentary species which inhabit the desert environment. The degree of taper of the wing is plotted against the proportion of the wing to total body length; the taper being expressed in the form of the length of the outermost secondary as a percentage of the wing-length.

When closely related species-pairs are compared by this method the more migratory species tends to show a displacement in the direction $x = \frac{-y}{2} + b$ with x increasing (b is a constant varying with the general adaptations of the birds under consideration).

Wing-length bears an allometric relationship to overall body dimensions and comparisons of species differing considerably in size are therefore invalid.

The Trumpeter Bullfinch shows a considerable displacement from Greenfinch (*Carduelis chloris*), a species of comparable general form, in the direction mentioned above, and this is also true when the Desert Lark is compared

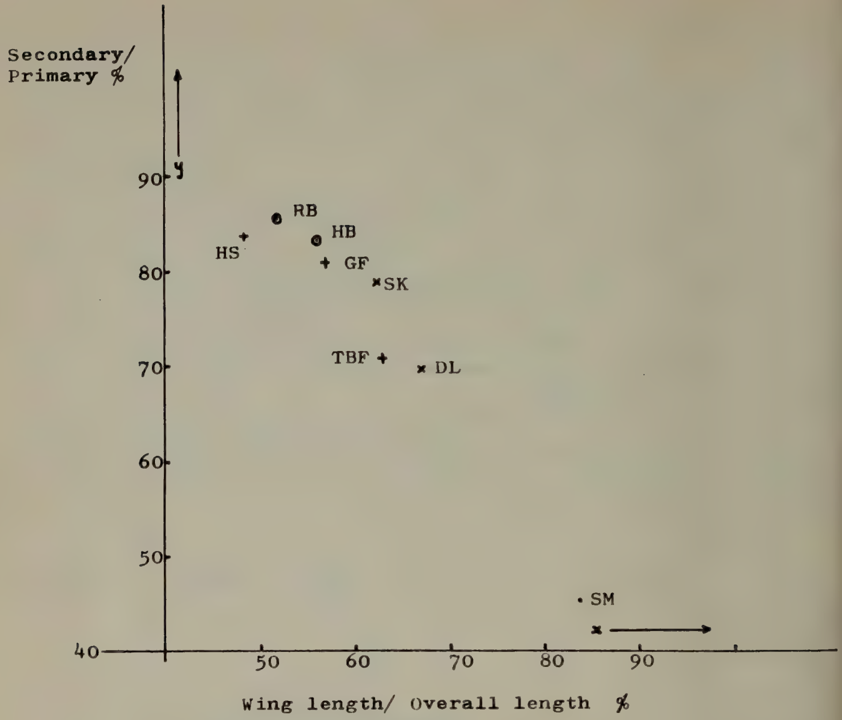


FIGURE I

Relationship of wing-ratio to wing-taper in certain passerines.

SK—Skylark DL—Desert Lark SM—Sand Martin HS—House Sparrow
GF—Greenfinch TBF—Trumpeter Bullfinch HB—House Bunting RB—Reed Bunting

with the Skylark (*Alauda arvensis*). The degree of displacement between Reed Bunting (*Emberiza schoeniclus*) and House Bunting is less marked, possibly reflecting the fact that the latter does not venture far from water.

An interesting feature of the distribution of the birds in zones A and B was the tendency for different species to join in loose feeding parties. Table IV illustrates this tendency.

TABLE IV

Numbers of individuals seen in parties of more than one.

Species composition	*Rhodopechys*	*Ammomanes*	*Emberiza*
One species	11	26	20
Emberiza and *Rhodopechys*	5	—	2
Emberiza and *Ammomanes*	—	15	20
Rhodopechys and *Ammomanes*	0	0	—
All 3 species	11	9	21

As can be seen, two-thirds of all the House Buntings recorded in parties of more than one bird occurred in mixed aggregates of more than one species, and half of all Desert Larks. The larks however, were much more numerous than the House Buntings at higher altitudes in zone A where some of the counts were made, and probably a much higher proportion than 50% of those in zone B were in mixed flocks.

The mixed-species parties were not compact but simply fed in the same general area and moved in the same direction when disturbed. It seems unlikely that birds were being concentrated on restricted feeding areas as one party was seen to move, in stages, a distance of about half a kilometer during which time the composition remained stable. This behaviour is reminiscent of the flocking of tits (*Parus* sp.), goldcrests (*Regulus regulus*) and nuthatches (*Sitta europaea*) in English woods in autumn.

Birds wintering at Tamanrassat

The oasis at Tamanrassat is the administrative centre for the whole of southern Algeria and also supports a military post and a moderate tourist industry. A combination of these factors has led to a great increase in the settlement of the oasis since Meinertzhagen visited it in 1931. This settlement has led to a considerable growth in the amount of cultivation, and in addition the French administration planted many tamarisk trees and a few citrus orchards. Because of these changes the winter avifauna seems to have altered and increased both in numbers and variety since Meinertzhagen's time.

The most striking feature of the bird life around the oasis in February was not its diversity so much as its abundance. The density of small passerines was reminiscent rather of coastal observatories during a "fall" than of a normal wintering population such as can be observed in Europe.

The total area of the oasis is not more than two square kilometers (excluding outlying areas of cultivation higher up the oued which were not counted), of which a quarter is taken up by streets and buildings and probably a half of the remainder is irrigated. Within this area the estimates listed below were arrived at. All are very approximate but, I believe, of the correct order. They were arrived at by a variety of means including surveying the available habitat from the top of the highest building, and estimating the number of tamarisk trees, a sample of which were then counted for birds.

TABLE V

Numbers of birds estimated to be present in the oasis of Tamanrassat on 21st February.

Pale Crag Martin	50
White Wagtail*	50–60
Great Grey Shrike	10
Brown-necked Raven	40
Olivaceous Warbler	100
Sardinian Warbler*	200
Chiffchaff*	at least 1,000
White-crowned Black Wheatear	60
House Bunting	400
Trumpeter Bullfinch	100
Senegal Firefinch	120
Turtle Dove	150
Egyptian Vulture	12

*=winter visitor

It is possible, of course, that the numbers of Chiffchaffs and Sardinian Warblers were augmented by birds moving north for the beginning of the spring migration but very few of either species are known to winter immediately to the south of the Hoggar (Bates, 1933). One explanation may be that the Tamanrassat area is less suitable for wintering than it used to be, as a result of the recent prolonged drought. If this is the case then birds which have wintered in the Hoggar in the past may be becoming concentrated in those oases such as Tamanrassat which are artificially irrigated.

During the last glacial period of the Pleistocene the Hoggar certainly supported a more luxuriant vegetation than at present. Martinez & Quezel (1958), on the basis of pollen studies, suggest an arm of Mediterranean vegetation stretching south from the Atlas to the Hoggar, with temperate woodland occurring at high altitudes in the mountains. Data from the distribution of palaearctic molluscs supports this hypothesis (Grove & Sparks, 1961). In view of this the present avifauna of the Hoggar must be regarded as a relic of a far larger and more diverse population during the Pleistocene.

The ecological problems posed by the wintering of palaearctic migrants in West Africa have been pointed out by Moreau (1966). The same problems certainly exist at Tamanrassat. Taking the arboreal insectivore niche as being occupied by the three warbler species it appears that the winter population competing for this niche is about 1,300 of which 1,200 are winter visitors. When biomass is considered winter visitors make up roughly 90 per cent of the total.

The Chiffchaffs do a certain amount of their feeding on the ground but even when all the small insectivores are considered (including White Wagtail and White-crowned Black Wheatear) the winter visitors still outnumber the resident individuals by 1,250 to 160, or approximately 10,500 to 3,000 gms. biomass (rough calculations based on the following weights: Chiffchaff 7.5 gms; Sardinian Warbler 10.0 gms; Olivaceous Warbler 12.0 gms; White Wagtail 20.0 gms; White-crowned Black Wheatear 30.0 gms. From Williamson 1962, 1963, 1964 and personal observations).

Etchécopar & Hüe suggest that not all the Olivaceous Warblers nesting in Saharan oases are resident but it is difficult to believe that many more would take up residence at Tamanrassat considering that those already present appeared to be in full song and holding territory.

ACKNOWLEDGMENT

I should like to thank R. E. Moreau for advice and encouragement in the preparation of this paper.

SUMMARY

The paper lists species seen on a journey across the central Sahara between 31st January and 24th February, 1968. Observations on the density of birds in the Hoggar Mountains and on some aspects of drinking habits are also described.

References:

Bates, G. L. 1933. Birds of the southern Sahara and adjoining countries in French West Africa. *Ibis* (13)3: 152–180.

Buchanan, S. 1926. *Sahara.* London: John Murray.

Butzer, K. W. & Twidale, C. R. 1966. Deserts in the Past. In Hills, E. S. (Ed.) *Arid Lands:* 127–142. Methuen.

Etchécopar, R. D. & Hüe, F. 1967. *The Birds of North Africa.* Edinburgh: Oliver and Boyd.

Geyr von Schweppenburg, H. 1917. Vogelzug in der Westlichen Sahara. *J. Orn.* Lpz. 65: 43–65.

Grove, A. T. & Sparks, B. W. 1961. Quaternary fossil non-marine mollusca from the Central Sahara. *J. Linn. Soc.* (*Zoo.*) 44: 355–364.

Lack, D. 1966. *Population Studies of Birds.* Oxford: Clarendon Press.

Martinez, C. & Quezel, P. 1958. Le dernier interpluvial au Sahara central. *Libyca* 6–8: 211–225.

Meinertzhagen, R. 1934. The Biogeographical Status of the Ahaggar Plateau in the Central Sahara. *Ibis* (13)4: 528–571.

Moreau, R. E. 1966. *The Bird Faunas of Africa and its Islands.* London: Academic Press.

Schmidt-Nielson, K. 1964. *Desert Animals.* Physiological Problems of Heat and Water. Oxford: Clarendon Press.

Vaurie, C. 1959–65. *The Birds of the Palaearctic Fauna.* London: Witherby.

Williamson, K. 1962, 1963, 1964. *Identification for Ringers*, Nos. 1, 2 and 3. Oxford. British Trust for Ornithology.

Comments on the classification of the Old World Ibises

by David Holyoak

Received 9th January, 1970

Peters (1931) published the most recent revision of the family Threskiornithidae, but this work is dated because of the different (wider) concepts of the species and genus that are now employed. This paper discusses the taxonomy of the genera (following Peters) *Threskiornis*, *Carphibis*, *Pseudibis*, *Thaumatibis* and *Geronticus*, based on an examination of skins at the British Museum (Nat. Hist.), London. In the absence of published information on the internal morphology, the suggestions given for changes in the status of genera need checking with anatomical studies before they can be considered fully acceptable.

When attempting to define the species limits for allopatric forms like these, reference has to be made to related sympatric species in order to judge the minimum differences that will allow sympatry. Perhaps because the ibis ecological niche is a narrow one, these minimum differences seem to be rather large in the ibises in comparison with many other groups of birds, suggesting that hypothetical species limits should be considered correspondingly wide.

The genera *Pseudibis* and *Thaumatibis*

Peters considered the genus *Pseudibis* to contain two species, the Black Ibis *P. papillosa* and the Burma Ibis *P. davisoni*; two forms that were previously separated generically as *Inocotis papillosus* and *Graptocephalus davisoni*. These are allopatric, *P. papillosa* being found in northern India south to Mysore, and *P. davisoni* from eastern Upper Burma to Pegu, Tenasserim, Cochin China and Thailand. Both have the head covered with bare black skin in the adult birds, but *P. papillosa* has a patch of red tubercules on the back of the crown which is missing in *P. davisoni*, which has a pale band (white or pale blue) lower on the nape. Their juvenile plumages appear to be identical and they do not differ significantly in other characters. The differences between them seem small enough for it to be best, in view of their allopatry, to treat them as forms of one species. If this is done, *papillosa* is the older name, so that they become *Pseudibis papillosa papillosa* (Temminck) and *P. papillosa davisoni* (Hume).

The Giant Ibis of the Malay Peninsula, *Thaumatibis gigantea*, is the largest of all the ibis species. It has the upper neck and head bare, and there is a small patch of yellow coloured tubercles on the crown of the head. The plumage is mainly various shades of mottled grey, with black remiges and rectrices, and a large silver-grey area on the base of each wing. The general characters of this bird—unfeathered head, pale area at the base of the wing, warts on the head, and general body proportions, taken together suggest a close relationship to the genus *Pseudibis*. *Thaumatibis* was originally separated on the basis of large size, plumage pattern, and the tubercles on the crown. Of these characters the large size is probably of little taxonomic importance, and if analogy with *Pseudibis* is justifiable, neither are the (considerably smaller) tubercles on the head. Nor is the plumage pattern likely to be of profound taxonomic importance; many other very large birds such as the ratites are dull coloured, probably as a consequence of their large size alone. Thus in view of the similarities of these two genera it may be best to combine them. Studies on the internal anatomy of both genera are however desirable before the taxonomy is changed, as the plumage pattern and general external features offer relatively few characters on which to judge the birds' relationships.

The genera *Threskiornis* and *Carphibis*

The genus *Threskiornis* is considered by Peters to contain three species, the Sacred Ibis *T. aethiopica* of Africa, Arabia and the Persian Gulf (formerly also Egypt), the White or Oriental Ibis *T. melanocephala* found from India, Ceylon and Burma to China and Japan, and the Australian White Ibis or Sicklebill *T. molucca* found from New Guinea to Australia. In adult plumage all three forms have the head and neck bare, the skin being black, white body plumage and patches of bare skin on the sides of the breast which extend as a stripe along the underside of the leading edge of the wing, to the carpal joint. These stripes of bare skin become bright red in the breeding season, but are dull grey-flesh colour for the rest of the year (C. W. Benson pers. comm.; pers. obs. at London Zoo). Figure 1 shows the differences between the adult plumages of the three forms, their subspecies, and their ranges.

Juveniles of the three forms have the neck and the head forwards to the eyes covered with grey, grey-brown or grey and white feathers, varying little in appearance between the species. The main differences between the forms in juvenile plumage are in the wing patterns; these are shown in Figure II.

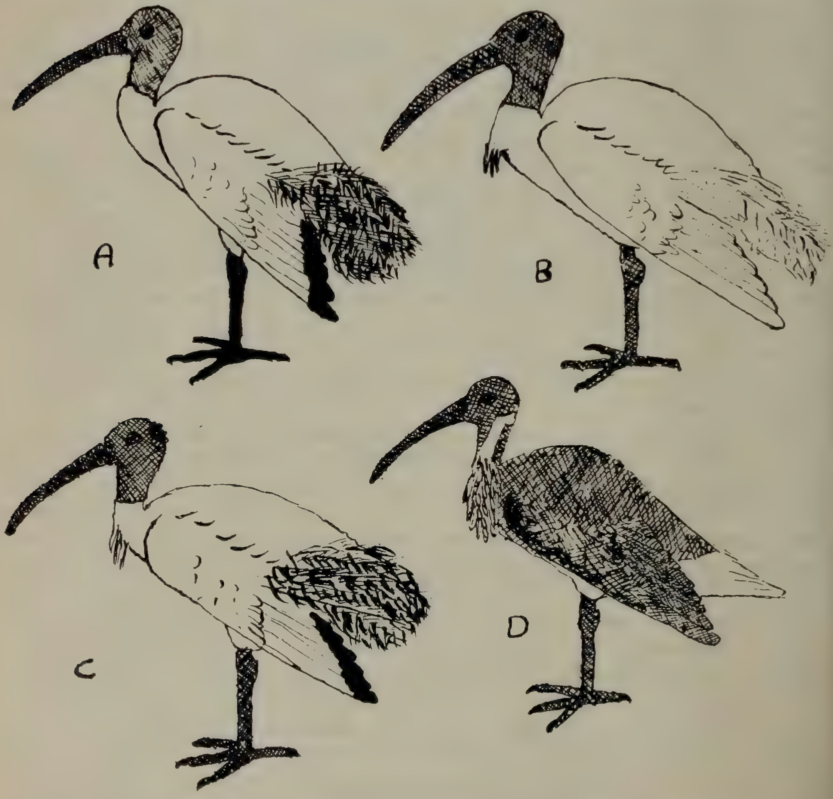


Figure 1. Adult plumages of the ibises of the genera *Threskiornis* and *Carphibis*; A = *T. aethiopica*, B = *T. melanocephala*, C = *T. molucca*, D = *C. spinicollis*.

From Figures 1 and 3 it can be seen that *T. aethiopica* and *T. molucca* (much melanin in the wing tips; ornamental plumes from the secondaries much broken and very glossy) resemble each other more closely in adult plumage than either of them resembles *T. melanocephala* (no melanin in wing tips; display plumes light grey, with hardly any gloss). The main differences between the adults of *T. aethiopica* and *T. molucca* are that *T. molucca* is alone in possessing a small patch of yellow tubercles on the crown and a tuft of elongated feathers at the base of the neck. However, the juvenile plumages of *T. molucca* and *T. melanocephala* are more similar to each other than either is to that of *T. aethiopica*.

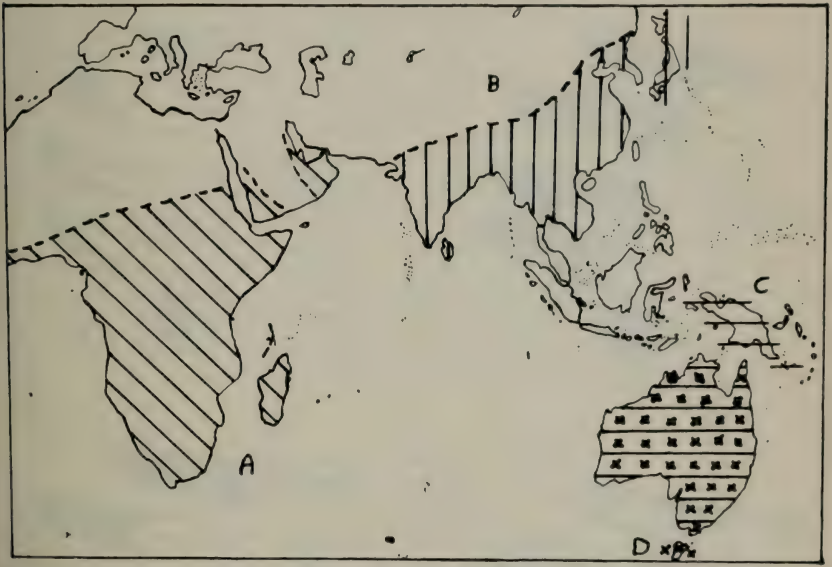


Figure 2. Distribution of *Threskiornis aethiopica* (A), *T. melanocephala* (B), *T. molucca* (C), and *Carphibis spinicollis* (D).

T. aethiopica bernieri has less black on the wing tips than the nominate form and duller display plumes from the innermost secondaries; eye light blue, not brown; Madagascar.

T. aethiopica abbotti has little or no black in the wing tips and duller display plumes than in *T. a. bernieri*; eye nearly white, not brown; Aldabra.

T. molucca pygmaea is considerably smaller than the nominate race, often with duller display plumes; Rennel Island, Solomons.

T. molucca strictipennis differs from adults of the nominate race mainly in having the shafts of the secondary wing feathers black, not white; Australia.

The evolution of these three forms can probably be best explained in one of two, or three ways. The original form probably resembled *T. aethiopica* and *T. molucca* and inhabited either the Asian mainland, Africa, or both and the intervening area. This basic form then spread either to Australia by way of Asia from Africa (at a time when the Near East was less arid), or from mainland Asia to New Guinea and Australia, and separately to Africa. There is no evidence from the ibises to prefer either of these hypothetical routes, though more bird groups with this kind of distribution have probably originated in southern Asia (*cf.* however, the genus *Cisticola*; B. P. Hall pers. comm.). After this, or concommitant with it, peculiarities such as the elongated throat feathers and the head tubercles of *T. molucca* probably arose (or were lost), and also the differences in the juvenile plumages. *T. aethiopica* later spread to Madagascar, losing black markings from both adult and juvenile plumages (*T. a. bernieri*), and to Aldabra where they have still less melanin in the plumage (*T. a. abbotti*) (Benson, 1967, and pers. comm.). *T. molucca* reached Rennel Island (and quite likely other islands on which it has since become extinct), where a loss of melanin from the display plumes has occurred.

T. melanocephala shows a greater melanin loss than the other forms; the juvenile wing pattern resembles that of *T. molucca*, which differs markedly from that of *T. aethiopica* (Figure 3). It also differs from *T. aethiopica* and resembles *T. molucca* in possessing elongated feathers at the base of the neck. This would suggest that this form evolved from one resembling *T. molucca*, possibly by island hopping northwards from the Papuan region followed by extinction on the intervening islands. The almost complete absence of melanin in the plumage may be taken as supporting this idea,

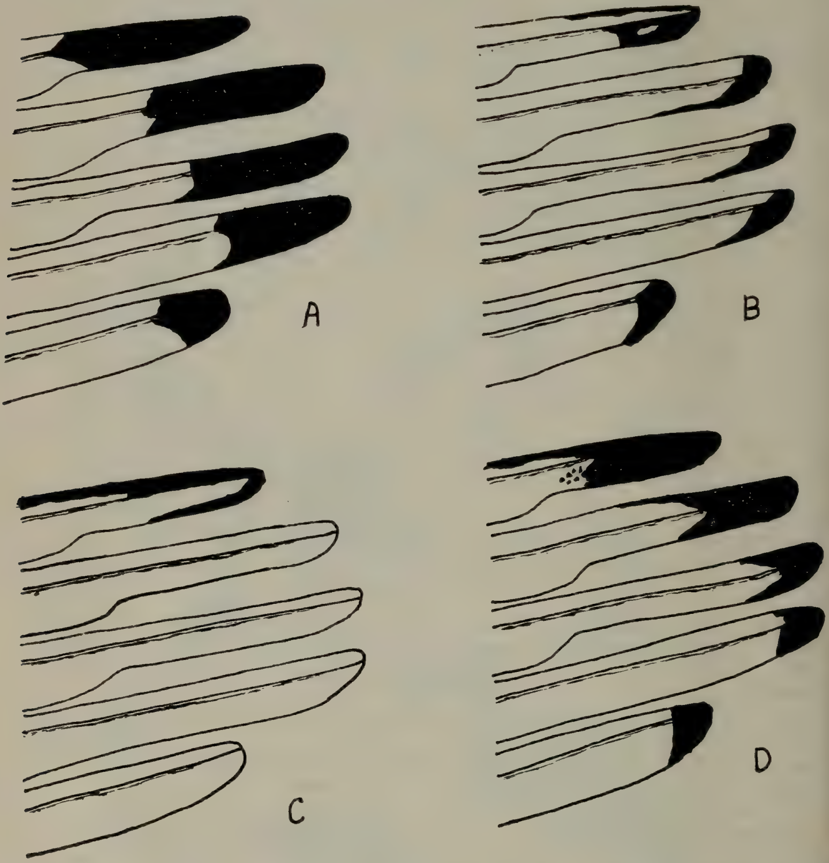


Figure 3. Dorsal view of the wing pattern in juvenile ibises of the genus *Threskiornis*; A = *T. aethiopica aethiopica*, B = *T. aethiopica abbotti*, C = *T. melanocephala*, D = *T. molucca*.

as the island forms of *T. aethiopica* (*T.a. bernieri* and *T.a. abbotti*) and *T. molucca* (*T.m. pygmaeus*), whose origins can hardly be doubted, also show a progressive loss of melanin. The secondaries adjacent to the display plumes in *T. molucca* show a larger area of black chequered with white than they do in *T. aethiopica*; C. J. O. Harrison (pers. comm. Ph.D. thesis, unpublished) has found that this pattern is usually found among birds that are showing a trend towards loss of melanin from the plumage, rather than in those that are gaining it, providing additional evidence that there is a general trend towards melanin loss in these forms.

This poses a taxonomic problem. The similarities of *T. aethiopica* and *T. molucca* are almost certainly too great for them to act as separate species if their ranges were to meet (in the Old and New Worlds no two forms of ibis are sympatric that do not differ considerably more than this in size and colour; the restricted ecological niche of all ibises suggesting that ecological separation is unlikely to occur). However, *T. melanocephala* is larger than these two forms and differs from both in having hardly any melanin in the plumage. It might well behave as a separate species if its range came to be connected with that of either *T. aethiopica* or *T. molucca*. Nevertheless its distribution, neck plumes and juvenile wing pattern show that this well differentiated form bears a closer relationship to *T. molucca* than to *T. aethiopica*. Thus there is a situation where two forms are probably conspecific, but a more recent derivative of one of these forms seems rather likely to act as a separate species to both of them. If the species is to have any phylogenetic reality it seems best to treat all three forms as conspecific, as it would seem unrealistic to do anything else were the position more complicated, with more forms involved.

This concept of 'potential interbreeding capability' is, however, a theoretical difficulty and of little practical use in taxonomy. As Mr. I. C. J. Galbraith has stressed to me, the question 'would these populations fuse?' calls for the response 'under what conditions?'. Thus one can only ensure that one's arrangement does not violate the species concept in areas of sympatry, and that it is as self-consistent as possible. With allopatric forms such as these, species-limits are best judged from the evidence of sympatry in related forms. An examination of these related sympatric species suggests that it is best to treat the three *Threskiornis* forms as representatives of one species; a list of the forms can now be given as follows:

Threskiornis aethiopica aethiopica (Latham)
Threskiornis aethiopica bernieri (Bonaparte)
Threskiornis aethiopica abbotti (Ridgway)
Threskiornis aethiopica molucca (Cuvier)
Threskiornis aethiopica pygmaeus Mayr
Threskiornis aethiopica strictipennis (Cuvier)
Threskiornis aethiopica melanocephala (Latham)

It is unfortunate that these changes will serve to confuse the status of the various forms when only a bare list is given; what were considered by Peters to be species will have the same nomenclatural rank as poorly marked subspecies. These grounds alone may be good enough reason for not uniting them under one species name, but this avoids the issue as the species ought to have an objective reality both phylogenetically, and so far as potential interfertility is concerned (though as discussed above a considerable subjective element is introduced when allopatric forms appear to fit one of these two criteria, but not both). It is for this reason that I suggest they be united under one name; a system of asterisks, brackets, spaces, or subspecies-group headings, may be used to divide off the forms of different biological status that are afforded the same nomenclatural rank.

The Straw-necked Ibis *Carphibis spinicollis* of Australia and Tasmania differs from the genus *Threskiornis* in having the back, whole wing, and the breast black, in having peculiar straw-like feathers at the base of the neck, and in lacking ornamental display plumes from the secondaries; this last character being the main one used to separate this genus from *Threskiornis*. The large amount of melanin in the plumage is probably of little taxonomic significance. *Carphibis* would seem to be related to *Threskiornis* from its general appearance, so the abundance of melanin may represent either an ancestral condition or the result of simplification from a pied pattern, a trend which could have taken a different course in *Threskiornis*. *Threskiornis molucca* and its derivative *T. melanocephala* have stiffened, elongated neck feathers suggesting those of *Carphibis*, though they are less specialised. *Carphibis* has a patch of bare skin on the flanks as in *Threskiornis*, but no stripe of bare skin along the front edge of the underwing; instead it has a stripe of white feathers crossing the underwing in a similar position. A patch of bright red skin would be less conspicuous on the black underwing of *Carphibis* than it is on the white underwing of *Threskiornis*, so the stripe of white feathers may represent either an ancestral condition or an adaptation that accompanied the acquisition of black wing linings; whichever it is, it seems unlikely to be a taxonomic character of profound importance. More distantly related genera such as *Geronticus* and *Bostrychia* show the potential for the evolution of this stripe of bare skin. Likewise, the absence of specially adapted display plumes from the innermost secondaries is probably not a character of generic importance. The closely related *Threskiornis aethiopica/molucca/melanocephala* group shows the progressive loss of these display plumes, and the species of this group show both the presence and absence of a (presumably) comparable tuft of display plumes at the base of the neck.

As discussed above, the plumage characters on which *Carphibis* is separated from *Threskiornis* do not seem sufficient to afford it generic rank. If they are united, *Threskiornis* is the older name, and all of the earlier names are still valid.

The genus *Geronticus*

Peters considered this genus to contain two species, the Hermit Ibis or Waldrapp *G. eremita* found in north Africa south to Abyssinia and the Near East (formerly also in southern Europe), and the Bald Ibis *G. comata* found in the mountains of south-east Africa. These two forms appear to be closely related; *G. comata* lacks the elongated feathers that form a crest from the nape in *G. eremita*, and the plumage is generally greener-glossed than in that form, with a bluer, less red gloss on the patch at the base of the wing. Their allopatric distribution and close similarity in appearance suggest that they are closely related, forming a superspecies if not best considered as being conspecific. However, for birds that mainly live and feed on land their distribution is peculiar. Through the kindness of Mrs. B. P. Hall I examined the distribution maps for the forthcoming *Atlas of Speciation in African Passerine Birds*; these show virtually all that is known of the distribution of passerine birds within Africa, and a more general indication of the extralimital range of species and superspecies that extend further afield. Some of these 962 passerine species have similar general habitat preferences to the *Geronticus* species, but none of them has a range that is more than remotely similar, suggesting that the factors causing their distribution and differentiation may have been in effect before the factors that caused the speciation of most African passerines. This would indicate that *G. eremita* and *G. comata* diverged, or at least became isolated, a long time ago.

In view of this evidence for the long separation of the two forms, and the shortage of plumage characters that might further indicate, or refute, the closeness of their relationship, it is probably best to consider them as separate species, to avoid nomenclatural change in what is a very marginal case. They do, however, form a well-marked superspecies.

The genera *Hagedashia*, *Nipponia*, *Bostrychia*, *Plegadis*, *Lampribis* and *Lophotibis*, and General Discussion of Generic Relationships

These six genera all seem to be valid taxonomic units, and there is no reason to question the species limits used within them, except as has already been done in *Plegadis*. Their relationships to one another and to the other ibis genera are obscure. The palaeontological evidence indicates that the ibises are a very ancient group, so that there must have been considerable adaptive radiation, speciation, and extinction in the past. Thus we are left with the scattered remnants of many lines of ibis radiation and diversification, as is apparent to anyone who examines more than any two or three ibis genera. Detailed anatomical studies will probably offer the best clues to the affinities of the various present day genera, coupled perhaps with palaeontological studies, as the fossil record of the ibises is better than that for most other groups of birds, though nonetheless poor.

ACKNOWLEDGMENTS

I am grateful to the staff of the Bird Room, British Museum (Nat. Hist.) for help and encouragement; in particular to Mrs. B. P. Hall and C. J. O. Harrison for a number of useful suggestions and to I. C. J. Galbraith for constructive criticism of my manuscript. The responsibility for the views on the taxonomy expressed in this paper remains, however, entirely my own.

SUMMARY

The taxonomy of the Old World genera of the Threskiornithidae is briefly discussed, based on an examination of museum skins, and distribution of patterns. The following changes in the taxonomy are proposed:

Pseudibis papillosa and *P. davisoni* should be considered conspecific. The anatomy of *Pseudibis* and *Thaumatibis* needs examination as these genera appear related, but skins offer few taxonomic characters.

Threskiornis aethiopica, *T. melanocephala* and *T. molucca* should be considered as representatives of one species.

The monotypic genus *Carphibis* should be merged with *Threskiornis*.

Geronticus eremita and *G. comata* appear very closely related, but there is zoogeographical evidence that they have been separated for a long time, so it is probably best to continue to afford them specific rank, in which case they form a superspecies.

References:

Benson, C. W. 1967. The birds of Aldabra and their status. *Atoll Research Bull.* 118: 63–111.
Hall, B. P. and Moreau, R. E. (in press). *An Atlas of Speciation in African Passerine Birds.* British Museum (Nat. Hist.), London.
Peters, J. L. 1931. *Birds of the World.* Cambridge, Mass. Vol. I.

The past and present status of the American Flamingo in the Guianas

by F. Haverschmidt

Received 14th January, 1970

Allen (1956: 69) gives a map of the former nesting stations of the American Flamingo (*Phoenicopterus r. ruber*) in the Guianas, and the maps in Palmer (1962) and Rooth (1965) are apparently based on it.

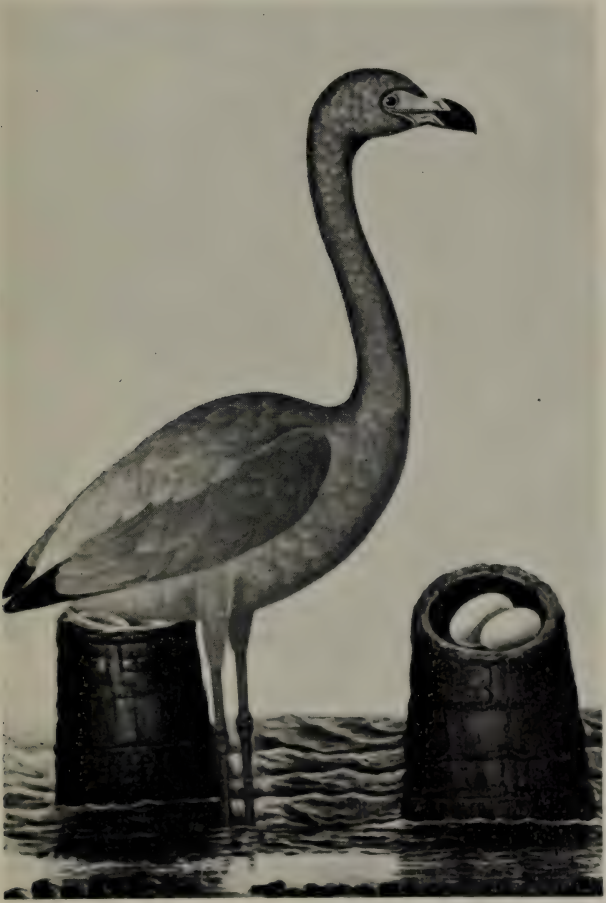
It seems necessary to submit the sources of these alleged nesting localities to a critical examination, as apart from a number of incorrect quotations, some of these records are based on insufficient evidence and are at least unproven. Four localities are mentioned: one in Guyana (formerly British Guiana), two in Surinam and one in French Guiana. The breeding station in Guyana, to start in the west, is at the mouth of the Waini River. Allen says that in 1848 Richard Schomburgk, quoting Cabanis, reported that flamingos nested there at irregular intervals. However, Allen makes two mistakes. Schomburgk (1847–1848) never said that these birds nested; on the contrary, he said categorically that they did not nest in Guyana ("brütet nicht in Br. Guiana") but that it was only an irregular visitor along the coast. Moreover it was Cabanis, Director of the Berlin Museum (he never was in Guyana) who worked out the collection assembled by Schomburgk and quoted a note by this collector.

In the narrative of his travels Schomburgk relates that he was from 21st till 27th April, 1841, at the mouth of the Waini River. He gives a graphic description of the rich birdlife on the mudflats, saying that he was unable to come within range of the flamingos and that he could not shoot a specimen for his collection. The sandbank where he saw these birds was at Lat. 8° 24′ N and Long. 59° 36′ W. In the English translation of this account Roth (1953) stated that this spot is now far out to sea and a few miles east of the river mouth.

Chubb (1916) makes the same mistake, stating that Schomburgk found nesting flamingos at that spot. The next author is Lloyd who apparently wrote about flamingos in Timehri Vol. II, a publication I have not seen, but Chubb quotes Lloyd's notes that the flamingo nests at Waini River in August. But as he relates that the nest is composed of "vegetable substances thrown up by the sea" and that the eggs "seem to be from two or three in number", it seems questionable whether Lloyd had seen the colony himself, and related only from hearsay.

More pertinent is the fact that Oates (1902) lists two eggs of the flamingo in the collection of the British Museum, collected in the "savannas of British Guiana" by J. J. Quelch and F. V. McConnell, both experienced collectors. Mr. C. J. O. Harrison was so kind as to write me that these eggs were received together with a large number of birds in 1895 and that the whole collection was undated. It seems strange that Chubb does not say a word about these eggs as his book was almost wholly based on the collection of McConnell. However, the fact remains, in view of the availability of eggs, that the flamingo bred before 1895 in Guyana, though the locality, the year and the time of the year remain unknown. As to its present status, not much is known. The latest authority, Snyder (1966), merely says that it occurs on mudflats and sandbanks or passes offshore along the coast, and occurs occasionally at Georgetown, Buxton, Barima River and Marooka.

We next come to Surinam. The occurrence of the flamingo along the coast has been known for centuries. The oldest report seems to be from Warren (1667), whose picturesque description I quote in full: "and upon the coast are a kind of fowl (whose name I can't remember) so tall, that at a distance, they appear like companies of men, upon the sand, and coming nearer, their glittering feathers d'Armors (of so pure a scarlet as no Art can equal) almost dazzle the greedy eyes of the Beholders" (quoted from Penard (1924) who apparently transferred this passage into modern English).



"Incubating" flamingo. Drawn by Ogier de Gombaud in Cayenne in 1804.

Allen quotes the Penard brothers (1908), who stated that according to old fishermen the flamingo bred "long ago" at the mouth of the Surinam River and that it nests on the Herminaflats near Coronie. The Herminaflats are further east, on the east side of the mouth of the Coppename River. Allen lists the Herminaflats as a breeding station around 1908 (the year of publication of Vol. I of the Penards' book).

However, both statements are from hearsay and seem very questionable, as in Surinam the Scarlet Ibis (*Eudocimus ruber*) is generally called flamingo, and the Herminaflats (better the mangroves bordering the coastline) were and still are a well known nesting station of the Scarlet Ibis. Moreover in the large egg collection assembled for the Penards, now preserved in the Leiden Museum, in which more than 600 eggs of the Scarlet Ibis are represented, eggs of the flamingo are conspicuous by their absence. If the flamingo had ever nested in that period in that locality eggs would undoubtedly have been taken for the Penards.

Another potential breeding station for the flamingo in Surinam lies much further east, along the coast between the Oranjekreek and the Marowijne (or Maroni) River (the border with French Guiana, and the third and most eastern dot in Surinam on Allen's map). Yet they have never been found nesting there. This general area was well known to August Kappler, an all-round naturalist, who lived in Surinam during 1835–1879. He started his career as a soldier and was for some time stationed at the mouth of the Oranjekreek, where there was a military post at that time. He founded in 1846 the settlement Albina on the left bank of the Marowijne River just opposite St. Laurent du Maroni on the French side. In one of his books (1881) he says that the flamingo occurs in great flocks along the coast between the Oranjekreek and the Marowijne River but that it does not seem to nest there. He also describes a raid of Indians on a colony of Scarlet Ibises (that must have been between June and August) during which he saw several flamingos.

During my latest visit to Surinam in October, 1969, Mr. J. Hofwijk of Paramaribo, whom I know as reliable told me that he had found in the first half of 1930 a small group of flamingo nests (about 8–12) between low mangroves on the coastal mudflats north of Totness, Coronie. He collected some eggs which he gave to a missionary. Unfortunately the eggs cannot be traced, but his description of the nests and eggs was correct.

With regard to the present status of the flamingo in Surinam, after I had compiled the text for my *Birds of Surinam* (1968), I received a number of data on flamingos seen along our coast mainly collected by personnel of the Surinam Forest Service when patrolling the coast line to survey the breeding colonies of sea turtles. These records, including those mentioned in my book, are arranged by months:—

January: Early January, 1968, 20 west of the mouth of the Surinam River; 20 (mostly immatures) near Oranjekreek; 31st January, 1968, 40 flying east near Matapica.

February: 22nd February, 1964, 2 immatures near Nickerie (in the west of the country).

March: 8th March, 1967, 9 (a few immatures among them) flying east at Wia Wia; 20th March, 1966, 18 flying west between the Coppename and Surinam Rivers; 14th March, 1968, 27 near Matapica; end of March till early April 1968 about 150 near Wia Wia.

April: April, 1964, about 500 at Kweriemanbank (between the Oranjekreek and the Marowijne River); mid-April, 1966 about 500 at the same locality.

May: 18th May, 1964, 500 at Kweriemanbank and during May, 1966, about the same number at this spot; 4th May, 1968, six at Wia Wia.

June: 10th June, 1959, large numbers between the mouth of the Coppename and Surinam Rivers near Toniholo; June, 1960 large flock at the same place; 19th June, 1965 seven near the mouth of the Coppename River; June, 1966, about 500 at Wia Wia; 13th June, 1967, four flying east at Eilanti (near the mouth of Marowijne River); 15th June, 1967, 40 at the same spot; 22nd June, 1967, in the morning 18 flying east, in the afternoon four flying west at this place; 21st June, 1968, 30–40 between the Coppename and Surinam Rivers.

July: July, 1960, a great flock at Herminaflats; 11th July, 1966, 50 at Wia Wia, 15th July, 1966, 15 at the same spot; 20th July, 1966, about 10 east of Nickerie; 2nd July, 1967, five flying east at Eilanti; 5th July, 1967, 15 flying east, and later on 10 flying west; 6th July, 1967, 23 flying west; 10th July, 1967, 35 flying east and 13th July, 1967, 30 flying east all at Eilanti.

August: 18th August, 1968, three west of the mouth of the Surinam River.

September: 10th September, 1967, three immatures flying east at Wia Wia.
October: 6th October, 1965 a small number at Eilanti; 7th and 8th October, 1967, one adult and three immatures at Oranjekreek.
November: No records.
December: 21st December, 1946, four over the lagoons near Nickerie and 13th December, 1952, four at the same place.

From these records it is clear that flamingos are present along the Surinam coast during the greater part of the year, only November records being lacking. The records are, however, biassed by the fact that patrolling by the Forest Service was mainly confined to the breeding season of the Sea Turtles. The almost continuous presence of flocks of flamingos mainly in the eastern part of the Surinam coast is in my opinion proof that there is an isolated, self-contained population which shifts between eastern Surinam and French Guiana.

Allen states that the breeding population on Bonaire in the Netherlands Antilles appears to disperse in an easterly direction along the coast of the Guianas, and Palmer (1962) goes even further, in my opinion without any evidence, when he stated that the Bonaire flock migrates to the Guianas.

As to the future discovery of flamingos breeding in Surinam, potential nesting habitats are available, especially in the east of the country between the Oranjekreek and Marowijne River. The best way to get an impression of potential habitats is from the air. I twice got the opportunity to fly over the coastline. On 4th February, 1965, I flew from the mouth of the Surinam River eastward to the mouth of the Marowijne River, and on 20th April, 1966, from the same starting point westward to the mouth of the Nickerie River. On neither occasion did I see any flamingos but it struck me that there are some lagoons behind the coastline between the Oranjekreek and Marowijne River which are suitable for nesting. A large part of this area is now included in the Wia Wia nature reserve (36,000 hectares).

We now come to French Guiana, where the dot on Allen's map is placed near the capital, Cayenne. The coastline of French Guiana is ornithologically very poorly known. The latest list of the birds of this country is by von Berlepsch (1908), who states that the flamingo is unknown. This is, however, incorrect. Already Buffon (ca. 1780) had written: "Ils sont bien connus à Cayenne, ou les naturels du pays leur donnent le nom de Tococo; on les voit border le rivage de la mer ou voler en troupes". This applies at the present day. Buffon gives a good description of the eggs and adds in a footnote: "décrit sur des oeufs de tococo, ou Flamant de Cayenne au cabinet du Roi". It is obvious that the flamingo nested in French Guiana in the 18th century.

Evidently flamingos nested in French Guiana also in a later period. In the collection of watercolours designed by Ogier de Gombaud, a "déportée" from France, who spent the years 1803–1809 in Cayenne, and whose pictures are now preserved in the library of "Teylers Foundation" at Haarlem, Holland, are two plates (Vol. I, Nos. XXXII and XXXIII, both dated 1804) of flamingos (Haverschmidt, 1957). No. XXXIII is reproduced here. The The handwritten note below it is: "No. 1 Tococo ou Phénicoptère sur son nid, couvant ses oeufs, No. 2 nid de Phénicoptère avec ses oeufs renvoyé à historique de Buffon". Possibly de Gombaud never saw a breeding colony himself, as the position of the incubating bird is incorrect. With regard to the present status of the flamingo in French Guiana, apart from the birds which have been seen during recent years crossing the Surinam border eastward (see above), there is a recent record by Steffee (1968), who saw nine flamingos near Cayenne on 23rd March, 1967. There are persistent rumours among the inhabitants of the eastern Surinam coast that flamingos nest in French Guiana. The continuous presence of flocks which cross the Marowijne River (the border between Surinam and French Guiana) in both directions, among which immatures are present, point to this, since nesting in Surinam is unknown at the present time. The area around the mouth of the Oyapock is perhaps the most likely.

SUMMARY

1. The American flamingo nested long ago (at least before 1895) in Guyana.
2. There is evidence but no definite proof that a small group nested or tried to nest near Coronie in Surinam in 1930.
3. In French Guiana it nested in the 18th century and possibly at the beginning of the 19th century
4. There is at present an isolated, self contained population of flamingos which shifts between the eastern part of the Surinam coast and French Guiana. These birds are practically present all through the year and as immatures are among them, it seems probable that there exists somewhere in French Guiana a nesting colony, now that nesting in Surinam is no longer known.

References:

Allen, R. P. 1956. The Flamingos: their life history and survival. *The National Audubon Society. Research Report No.* 5.

Berlepsch, H. von, 1908. On the birds of Cayenne. *Novitates Zoologicae* 15: 312.

Buffon, G. L. Leclerc. ca. 1780. *Historie Naturelle. Oiseaux*. Tom. 17. Paris.

Chubb, C. 1916. *The Birds of British Guiana*. Vol. I. London.

Haverschmidt, F. 1957. Ogier de Gombaud, peintre inconnu des Oiseaux de Guyane. *L'Oiseau et la Revue Française d'Ornithologie* 27: 172–178.

— 1968. *Birds of Surinam*. Edinburgh.

Kappler, A. 1881. *Holländisch Guiana*. Stuttgart.

Oates, E. W. 1902. *Catalogue of the collection of birds eggs in the British Museum (Natural History)*. Vol. II. London.

Palmer, R. S. 1962. *Handbook of North American Birds*. Vol. I. New Haven.

Penard, F. P. and Penard, A. P. 1908. *De Vogels van Guyana (Suriname, Cayenne en Demerara)*. Vol. I. Paramaribo.

Penard, Th. E. 1924. Historical sketch of the ornithology of Surinam. *De West Indisch Gids* 6: 145–168.

Rooth, J. 1965. The Flamingos on Bonaire (Netherlands Antilles). *Natuurw. Studiekring Suriname en de Nederlandse. Antillen Publication No.* 41. Utrecht.

Roth, Walter E. 1953. *Richard Schomburgk's Travels in British Guiana* 1840–1844. 2nd impression. Georgetown. (1st impression, 1922).

Schomburgk, R. 1847–1848. *Reisen in Britisch Guiana in den Jahren* 1840–1844. Vols. I–III. Leipzig.

Snyder, D. E. 1966. *The Birds of Guyana (formerly British Guiana)*. Salem.

Steffee, N. D. 1968. Flamingo's in French Guiana. *Florida Naturalist* 41: 20.

Warren, G. 1667. *An impartial description of Surinam upon the continent of Guiana in America.* London.

Two New Birds from the Ivory Coast

by Melvin A. Traylor

Received 26th January, 1970

The following notes are based on collections made by Daniel Parelius in the Ivory Coast. His early collections were reported on by Traylor and Parelius (1967) and his most recent collection was made in the summer of 1969.

Campethera nivosa

The woodpecker *Campethera nivosa* is a forest bird of both upper and lower Guinea. In lower Guinea it is confined to the forest, in either virgin or second growth (Chapin, 1939: 577). In upper Guinea, however, Bannerman

(1933: 433) says that it extends into open bush country in Ghana and Sierra Leone. When Bannerman's Ghana localities are examined, the most northern is Kumasi, at ca. 7° N. and still in the southern third of the country.

In the Ivory Coast, Parelius has collected a good series of *nivosa* at Abidjan in the forest region along the coast, and also a male and female from a small patch of gallery forest near Korhogo, in the drier woodland area at ca. 9° 30′ N., thus far outside the normal range of the species. The latter two specimens are remarkable in having much longer wings than any other population of the species. The male was reported in Traylor and Parelius (1967: 103), and its exceptional wing length noted. With the finding of a second specimen showing the same character, this unique population must be recognized as:

Campethera nivosa maxima subsp. nov.

Type: adult ♂, collected at Korhogo, Ivory Coast, 22nd March, 1965, by Daniel Parelius. Field Museum of Natural History No. 277146.

Diagnosis: similar in colour to *C. n. nivosa*, but with much longer wing; larger to the same degree than *C. n. efulensis*, if that form is considered distinct from *nivosa*.

Measurements of type: wing 98, tail 47, bill 21.5, tarsus 19 mm.

Range: as far as known, confined to a small patch of gallery forest, southwest of Korhogo, northern Ivory Coast.

Remarks: this race is much larger in wing size than any other West African populations. Comparative wing measurements in mm. are:

	No. of spec.	♂♂	*No. of spec.*	♀♀
maxima	1	98	1	98
nivosa (Abidjan)	5	87–89 (88.0)	3	85–91 (88.0)
from Bannerman (p. 431)	13	85–93	17	84–92
efulensis from Bannerman (p. 433)	9	83–88	10	82–91
F.M.N.H., Cameroon	10	83–90 (86.5)	12	82–90 (87.4)

The specimens from the bush country of Ghana and Sierra Leone, that Bannerman mentions, are included in his measurements, so it is evident that *maxima* is not a generally distributed savanna race, replacing *nivosa* north of the forest. Considering the degree of difference between *maxima* and the *nivosa* popluation at Abidjan only 300 miles to the south, there must be complete isolation between them at the present time. Any regular genetic interchange between them would certainly swamp the numerically much smaller population *maxima*.

The Ivory Coast is not so well collected that positive statements concerning the distribution of species can be made with any confidence. However, the area between Abidjan and Korhogo around Bouaké and Beoumi, a mixture of savanna and forest, is probably the best known region of the country, and since the species is not known from there, it probably does not occur between the forest proper and Korhogo. Whether *maxima* is a relict from the time when the upper Guinea forest was more extensive, or the result of a fortuitous invasion under present conditions, cannot be determined.

Muscicapa griseigulare

The flycatcher *Muscicapa griseigulare* has for a long time been placed in the genus *Parisoma*, but I agree with White (1963: 11) that it is better placed in

Muscicapa. This is a flycatcher of the lower Guinea forest, previously known from south-eastern Nigeria south to north-western Angola and east to Uganda. However, in June, 1969 Daniel Parelius collected a single male at Duékoué, 6° 45′ N., 7° 21′ W., in the forest of western Ivory Coast. This is some 1000 miles west of any previous locality. Although only the single specimen is known, it exhibits such marked differences that I have no hesitation in describing it as a new subspecies. It gives me great pleasure to name it in honour of the collector, Daniel Parelius, who has added much to our knowledge of the distribution of birds in the Ivory Coast.

Muscicapa griseigulare parelii subsp. nov.

Type: adult ♂, collected at Duékoué, Ivory Coast, 6° 45′ N., 7° 21′ W., on 23rd June, 1969, by Daniel Parelius. Field Museum of Natural History No. 285545.

Diagnosis: differs from *grisgeigulare* in having the lower mandible black with a trace of pale horn at the base, instead of being wholly pale; has a proportionately much longer tail than *griseigulare*; in absolute measurements the wing is shorter and the tail longer. In general colour *parelii* is more bluish slate than *griseigulare*, but this probably is due to the difference in age of skins, 15–50 years.

Measurements of type: wing 59, tail 54, bill 14, tarsus 17 mm.

Range: known only from the type locality.

Remarks: in nominate *griseigulare*, the pale lower mandible is so distinctive that Bannerman (1939: 224) notes it as a good field mark in distinguishing *griseigulare* from the '*Alseonax*' members of the family. In *parelii*, however, the whole bill appears black; it is only on close examination that the pale base of the mandible can be seen.

Although the individual measurements of wing and tail of *parelii* are not strikingly different from those of *griseigulare*, the proportion of tail to wing is. Comparative measurements in mm, of males are:

	No. of spec.	*Wing*	*Tail*	*T/W*
parelii	1	59	54	.92
griseigulare				
F.M.N.H: Uganda, Angola, Cameroon	9	61–67 (64.1)	48–53 (50.3)	.74–.83 (.79)
from Bannerman (p. 223)	5	62.5–66	50–53	

While the wing and tail measurements of *parelii* would probably overlap those of *griseigulare* if longer series of both were available, the proportion tail/wing in *parelii* falls far outside the range of that of *griseigulare*. Considering the strong characters separating these two races, the isolation of *parelii*, 1000 miles from the nearest known *griseigulare*, is probably real.

References:

Bannerman, D. A. 1933. *The Birds of Tropical West Africa*, 3: 487 pp. London.

— 1936. *The Birds of Tropical West Africa*, 4: 459 pp. London.

Chapin, J. P. 1939. The Birds of the Belgian Congo, 2. *Bull. Amer. Mus. Nat. Hist.*, 75: 632 pp.

Traylor, M. A. and D. Parelius. 1967. A Collection of Birds from the Ivory Coast. *Fieldiana: Zool.*, 51: 91–117.

White, C. M. N. 1963. *A Revised Check List of African Flycatchers, Tits*, etc., 218 pp. Lusaka, Zambia.

The taxonomy of the Mascarene Olive White-Eye, *Zosterops olivacea* (L.)

by Frank B. Gill

Received 26th January, 1970

As a result of recent studies of the white-eyes of the Mascarene islands in the western Indian Ocean (Gill, in press), I feel that *Zosterops olivacea olivacea* (L.) and *Zosterops olivacea chloronothos* (Vieillot) should be considered separate species. The two have a rather complicated nomenclatural history (see Moreau, 1957a) and are now considered only subspecifically distinct (Moreau, 1957b, 1967). While the similarity of these two island white-eyes indicates their close relationship, differences between them are also many (Table 1). They differ in their vocalizations, plumage coloration, soft part coloration, overall size, and proportions of the culmen and of the tail with respect to wing length. Morphological differences between them cannot be attributed to the ecogeographic adaptation so evident in continental African *Zosterops* (cf Moreau, 1957b). Differences between living individuals of these two white-eyes are particularly striking, especially their call notes and vocal behaviour (see Gill, in press, for details). *Z. o. chloronothos* and *Z. o. olivacea* are also more different from each other than are the two insular populations of *Z. borbonica* with which they are sympatric and which are apparently later colonists of the Mascarene islands (Gill, in press).

TABLE I

Differences between *Z. o. olivacea* (L.) and *Z.o . chloronothos* (Vieillot)

Character	*Z. o. olivacea*	*Z. o. chloronothos*
COLORATION		
Crown	Black	Gray
Back	Green	Gray
Belly	Dark gray with green in center	Light gray; No green
Feet	Dark gray	Light brown
Bill	Black with gray base	Light brown
SIZE*		
Wing length (mean)	57.9 mm. (20)	52.2 mm. (7)
Tail/Wing (mean ratio)	0.71 (19)	0.64 (7)
Culmen/Wing (mean ratio)	0.27 (20)	0.32 (7)
VOCALIZATIONS		
Feeding call	Tsip *or* tu tu	pit-pit-pit

*Sample size in parentheses.

Decisions as to the specific relationships of allopatric populations are necessarily speculative because the crucial tests of reproductive compatibility are not possible. Furthermore few morphological criteria are consistently useful for deciphering species limits in the genus *Zosterops*. However, considering the character uniformity that prevails among white-eyes ,the differences characterizing *Z. o. olivacea* and *Z. o. chloronothos*, which include proportions as well as vocalizations, strongly suggest differentiation beyond the infra specific level.

If granted the specific status I am recommending here, these two white-eyes should become *Zosterops olivacea* (L.), which is found only on Réunion

Island, and *Zosterops chloronothos* (Vieillot), which is found only on Mauritius Island.

ACKNOWLEDGMENTS

I am grateful to R. E. Moreau for his comments on an earlier draft of this paper.

References:
Gill, F. B. (in press). Evolution and ecology of the sympatric Mascarene White-eyes, *Zosterops borbonica* and *Zosterops olivacea*. *Auk*.
Moreau, R. E. 1957a. The names of the Mascarene White-eyes. *Bull. Brit. Orn. Cl.* 77: 7–8.
— 1957b. Variation in the western Zosteropidae (Aves). *Bull. Brit. Mus.* (*Nat. Hist.*) *Zoology*, 4: 309–433.
— 1967. Family Zosteropidae, African and Indian Ocean taxa. pp. 327–337 *in Check-list of birds of the world*, vol. 12 (R. A. Paynter, Jnr., Ed.). Cambridge, Mass., Mus. Comp. Zool.

New and unusual records from south-west Ethiopia

by L. H. Brown and Emil K. Urban

Received 24th March, 1970

In the course of preparation of a checklist of the birds of Ethiopia (Urban and Brown, in press) two unusual records not previously published seem worthy of special note. They are both sight records, but were made in conditions admitting little doubt.

(i) *Aviceda cuculoides* Swainson — Cuckoo Falcon

Neither Mackworth-Praed and Grant (1957) nor White (1965) admit this species to Ethiopia. However, on 25th January, 1969 L.H.B. saw an adult soaring and calling its distinctive 'peeuw' in the upper Mwi valley, in the foothills of the Maji plateau, south-west Ethiopia. On 12th–14th February, 1969 two more were seen by L.H.B. and E.K.U. in lowland tropical forest at Godare, south-west Ethiopia (35° 2′ E., 7° 26′ N.), indicating that the species should be quite common in this area. This involves an extension of range by about 400 miles from Kenya or the southern Sudan, where the species is doubtfully reported. *Aviceda cuculoides* is an unmistakable species, particularly when seen well at close range in the open, as all three of these individuals were, and when, as in the first case, it emits its buzzard-like mewing call. The subspecies concerned is naturally not determined but could be either the nominate west African *A. c. cuculoides* or *A. c. verreauxii* from East and South Africa.

(ii) *Podica senegalensis* Hartlaub — Finfoot

The single record of this species in Ethiopia to date is by Benson and Schüz (1967) on the Blue Nile above Tisisat Falls, in typical finfoot habitat. On 16th February, 1969 a finfoot was seen on the upper Godare River, south-west Ethiopia. The bird was flushed from a pool under a rock cliff, and swam away downstream, keeping the body half submerged in a stealthy manner. It was probably an immature or a female, but the whitish stripe down the side of the neck was well seen. The only other species that could possibly be confused with *P. senegalensis* is the Black Duck *Anas sparsa*, but this bird did not behave like a Black Duck. L.H.B. is familiar with both species on Kenya rivers, and we consider that this individual, again seen in typical finfoot habitat, is the second acceptable record of the species in Ethiopia. As in the case of *A. cuculoides*, these records indicate an extension of the previously known range.

References:

Benson, C. W. and Schüz, E. 1967. The African Finfoot in Ethiopia. *Bull. Brit. Orn. Cl.*, 87: 149–150.

Mackworth-Praed, C. W. and Grant, C. H. B. 1957. *Birds of eastern and north-eastern Africa*, Vol. I. Longmans, London.

White, C. M. N. 1965. A revised checklist of African non-passerines birds. Government Printer, Lusaka.

A new race of *Serinus citrinelloides*

by Melvin A. Traylor

Received 20th February, 1970

In the summer of 1969, Mr. Peter L. Britton of Yala, Kenya, wrote to Mr. C. W. Benson at Cambridge to say that he had studied *Serinus koliensis* in the field and found it to be a well marked species, and that the local population of *citrinelloides*, with which *koliensis* had often been confused in the past, represented an undescribed race. At the same time Mr. Britton forwarded several specimens of both species to Mr. Benson with the request that the latter formally describe the new subspecies, since he, Mr. Britton, felt that Benson had more experience in dealing with this taxonomically difficult genus. Benson, unfortunately, did not have the time to deal with the problem, and Britton then turned to the Field Museum, where van Someren's specimens from the same area are now housed. I am extremely grateful to both Britton and Benson for having the privilege of studying and describing this new taxon. Mr. Britton's field studies of the living birds are the necessary foundation for our present understanding of this group, and it gives me great pleasure to name this new subspecies for him.

The most recent review of the genus *Serinus* in Africa is that of Rand (1968). He divides the genus into several groups, of which his group II includes the species *citrinelloides*, *frontalis*, *capistratus*, *koliensis* and *scotops*. The last named is South African and presents no problems, but the other four occur in eastern Africa in a confusing way. The important characters in separating the species are the shape of the bill and the presence or absence of strong sexual dimorphism.

The species *citrinelloides* (see map) occurs from Abyssinia south through Kenya and Tanzania to Malawi, adjoining Zambia and northern Moçambique. It has a moderately long and attenuated bill and has often been placed in the genus *Spinus*. Both moderate and extreme sexual dimorphism is found within this species. In the races *citrinelloides* and *kikuyuensis*, males are pure yellow below and have a black mask on the chin, sides of the face up to and including the eyes, and a narrow line on the forehead; females are duller olive-yellow below, with profuse streaking on throat, breast and flanks, and without a black mask. In *hypostictus* and the new race *brittoni* (described below), males more nearly resemble the females, with streaking on throat and breast and occasionally flanks, and with gray rather than black mask. The ranges of *hypostictus* and *brittoni* are separated by that of *kikuyuensis*, which extends from the central Kenya highlands west to near Sare, south of Kavirondo Gulf (Britton, *in litt.*).

The species *frontalis* is distinguished by its slender, attenuated siskin-like bill, and by its uniquely coloured females. The males are similar to those of *citrinelloides* in being pure yellow below and in having a black mask, but the females differ from those of all other species in being unstreaked clear yellow below; they lack, however, the black mask of the males. The range of *frontalis* is from Jinja in eastern Uganda to the Ituri district, Congo, extreme north-western Tanzania, and south through the Kivu and the highlands west of Lake Tanganyika to Abercorn in Zambia. Although the ranges of *citrinelloides* and *frontalis* approach each other both in eastern Uganda/western Kenya, and in Zambia/south-western Tanzania, there is no record of sympatry. Most authors have kept *frontalis* as a race of *citrinelloides*, but I agree with Rand in considering it a separate species.

In the western species *capistratus*, the males are identical in colour with those of *frontalis*, but easily separated by the short, stubby serin-like bill that characterizes the species. Females are normally coloured for the group, that is streaked below, unlike the females of *frontalis*. The ranges of *capistratus* and *frontalis* overlap at the north end of Lake Tanganyika, but as Chapin (1954: 608) points out, where they meet '*capistratus* occupies the lowlands and *frontalis* is restricted to the mountains.' From Lake Tanganyika, the range of *capistratus* extends south to northern Zambia, and west to Gabon and Angola.

The final species, *koliensis*, is the only one that is truly sympatric with any of the others. Its range extends from western Kenya, where it overlaps *brittoni*, through Uganda to the north of Lake Kivu; in the last two regions it is found with *frontalis*. *Koliensis* is characterized by its stout bill like *capistratus*, and by having the male streaked below like the female. It was not until 1952 that Grant and Mackworth-Praed formally described *koliensis*, as a race of *capistratus*. In this they were influenced by van Someren (1932: 329) who called his specimens *S. capistratus* subsp.; the main reason for suggesting this relationship was the stubby bill. Chapin (1954: 609) was the first to consider *koliensis* a distinct species.

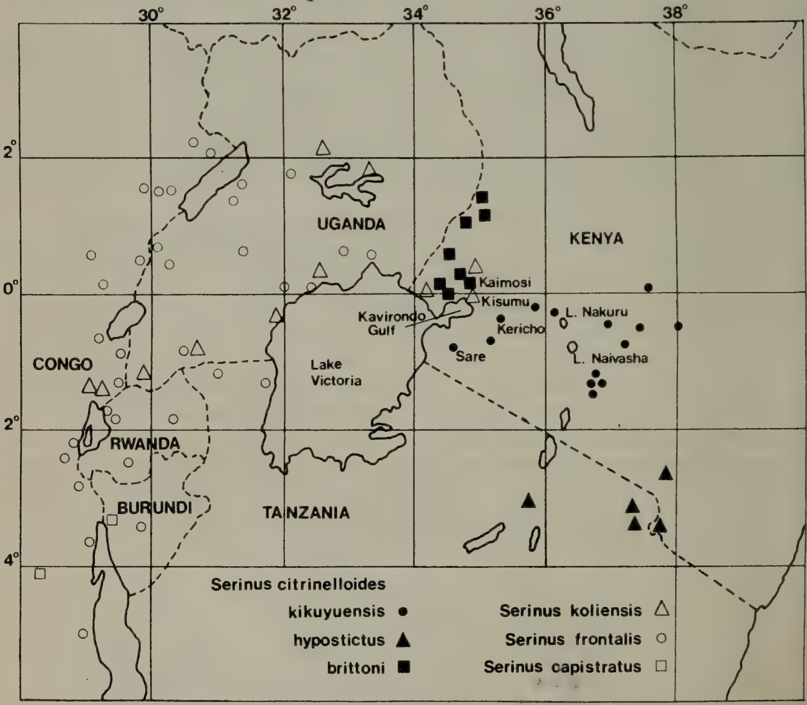

30°
32°
34°
36°
38°
2°
0°
2°
4°
UGANDA
KENYA
Kaimosi
Kisumu
Kavirondo Gulf
Kericho
Sare
L. Nakuru
L. Naivasha
Lake Victoria
CONGO
RWANDA
BURUNDI
TANZANIA
Serinus citrinelloides
kikuyuensis ●
hypostictus ▲
brittoni ■
Serinus koliensis △
Serinus frontalis ○
Serinus capistratus □

Figure 1. Map showing the East African range of *Serinus citrinelloides*, and of the related species *koliensis*, *frontalis* and *capistratus*.

The careful field work of Mr. Britton has shown that Chapin was correct. Unlike all its congeners, *koliensis* is a species confined to papyrus rather than woodland, and differs also in the form of its nest. Despite the close similarity in appearance to the sympatric *brittoni*, the race of *citrinelloides* in western Kenya, there is probably no close relationship between them.

The similarity of *brittoni* both to the conspecific *hypostictus* and to *koliensis* has caused it to be overlooked in the past. Van Someren (1922: 172) called his specimens from Kisumu and South Elgon '*hypostictus*?', since this race of Tanzania also has both sexes streaked below. Later, Van Someren (1932: 329) called them intergrades between *kikuyuensis* of the central Kenya highlands and *frontalis* of Uganda; this was an improbable combination since both these taxa have the males pure yellow below. Finally, Chapin (1954: 609) considered them to be intergrades between *kikuyuensis* and *koliensis*. This is understandable, since before Britton's field studies, the distinctiveness of *koliensis* was not recognised. Now however, the western Kenya population of *citrinelloides* can be appreciated for what it is, a race of *citrinelloides*, similar to *hypostictus* but sufficiently distinct to be called:

Serinus citrinelloides brittoni subsp. nov.

Type: adult male from Kapenguria, north-western Kenya, collected 14th June, 1934, by V. G. L. van Someren. Field Museum of Natural History No. 204383.

Diagnosis: similar to *S. c. hypostictus* of south-eastern Kenya and Tanzania in having the males streaked on throat and breast like the females. Differs in having a narrow yellow superciliary that is absent in *hypostictus*, except for some specimens from Malawi; the superciliary is more marked in males than in females. In *brittoni* the gray mask is reduced to hardly more than a chin spot and the cheeks and auriculars are greenish; in *hypostictus* the mask is darker and always covers the chin and cheeks, and is also found in females. The upper parts in *brittoni* average brighter, more yellowish green, with finer streaking; however, there is so much individual variation that only the extremes can be identified with certainty on this character. Size of *brittoni* and *hypostictus* is the same.

Measurements of type: wing 69; tail 49; bill 14; tarsus 15 mm.

Range: western Kenya, from the Nyanza district north of Kavirondo Gulf north to the eastern slopes of Mt. Elgon and Kongelai. Localities at which it has been taken are: Yala River, Mulaha Dam, Ng'iya, Lerondo, Kaimosi, Kakamega, Lucosi Road, Bungoma, east slopes of Elgon, Kapenguria, Kongelai. These include altitudes from 4200 to 9100 feet. Van Someren listed Kisumu as a locality for his '*hypostictus*?', but I have been unable to find such a specimen, either in New York or Chicago. He may have had a mixed series including some *koliensis*.

Remarks: There is comparatively little difference between *brittoni* and *hypostictus*, despite the fact that at present their ranges are divided by that of *kikuyuensis*. The range of the latter is the Kenya highlands on both sides of the rift, from Mt. Kenya and Nairobi to Nakuru and Mau, and extending west of the highlands almost to Lake Victoria at Sare. This effectively separates *brittoni* to the north of Kavirondo Gulf from *hypostictus*, which extends northwest to the crater highlands of northern Tanzania. It is probable that at one time *kikuyuensis* was confined to the highlands, and the ranges of *brittoni* and *hypostictus* were continuous along the eastern shore of Lake Victoria; then at some later date *kikuyuensis* extended its range westward to divide the other two.

It is quite possible *brittoni/hypostictus* may prove to be species distinct from *citrinelloides* and *kikuyuensis*. *Brittoni* has been taken at Kaimosi, and *kikuyuensis* is known from Kericho, less than 50 miles south-east. If exploration of the intervening area shows that they meet without intergrading, then they will have to be kept as separate species.

The resemblance between *brittoni* and *koliensis* is remarkably close despite the great dissimilarity in habits. In the hand, *brittoni* can only be distinguished by the longer and more slender bill, and average larger wing length. Comparative measurements in mm. of the various taxa are given below.

		No. of spec.	*Wing*	*Tail*	*Bill*
S. c. hypostictus	♂♂	(16)	63–68 (66.9) (once 74)	46–55 (48.7)	13–16 (14.3)
	♀♀	(7)	65–67 (66.3)	47–50 (48.9)	13.5–15 (14.1)
kikuyuensis	♂♂	(9)	64–72 (67.4)	46–56 (48.6)	12–15 (14.2)
	♀♀	(8)	66–69 (67.1)	47–51 (49.3)	13–15 (13.7)
brittoni	♂♂	(24)	63–70 (67.0)	44–51 (48.0)	12.5–14.5 (13.5)
	♀♀	(11)	63–69 (65.2)	44–51 (47.1)	12–14 (13.2)
S. koliensis	♂♂	(3)	61–65 (63.0)	45–47 (46.3)	12–13 (12.5)
	♀♀	(6)	60–65 (62.8)	45–49 (46.5)	12–14 (12.8)
S. frontalis	♂♂	(15)	60–66 (62.6)	42–50 (45.3)	13–15 (13.9)
	♀♀	(6)	59–65 (61.2)	40–47 (43.8)	12.5–14 (13.2)

ACKNOWLEDGMENTS

During this study, I had the opportunity of examining the pertinent specimens in the collection of the American Museum of Natural History in New York, for which privilege I would like to thank Dr. Dean Amadon. For the loan of necessary comparative material, I would like to thank Mrs. B. P. Hall (British Museum), Dr. Herbert Friedmann (Los Angeles County Museum), Dr. Richard L. Zusi (U.S. National Museum), and Mr. Alec Forbes-Watson (National Museum, Nairobi).

Again, I want to express my appreciation to Mr. Britton for the opportunity to study his material and to describe this new subspecies. It is only through the intelligent blending of careful field work and museum study such as Britton's that the remaining problems of speciation will be solved.

References

Chapin, J. P. 1954. The Birds of the Belgian Congo, part 4. *Bull. Amer. Mus. Nat. Hist.*, 75B: 846 pp.

Rand, A. L. 1968. Intra-relations of African Canaries, Genus *Serinus*. *Fieldiana*: *Zool.* 51: 125–134.

van Someren, V. G. L. 1922. Notes on the Birds of East Africa. *Novit. Zool.*, 29: 1–246.

— 1932. Birds of Kenya and Uganda, being Addenda and Corrigenda to my previous Paper in "Novitates Zoologicae," XXIX, 1922. *Novit Zool.* 37: 252–380.

A note on three female Pochard x Tufted Duck hybrids

by James Harrison and Jeffery Harrison

Received 18th February, 1970

The occurrence of the drake hybrid between the Pochard, *Aythya ferina* L., and the Tufted Duck, *Aythya fuligula* L., having masqueraded as a Lesser Scaup, *A. affinis* L., until its hybrid constitution was demonstrated by Perrins (1961), is now widely recognised. At the time of our review of

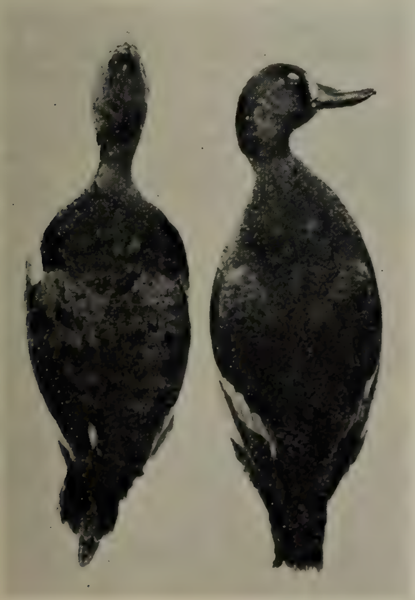
Aythya hybrids (Gillham, Harrison and Harrison, 1965) only one female of this cross was known, a wild-shot bird, 4th January, 1939, Hickling Broad, Norfolk (Norwich Castle Museum, No. 119.939). At that time no field characters were on record.

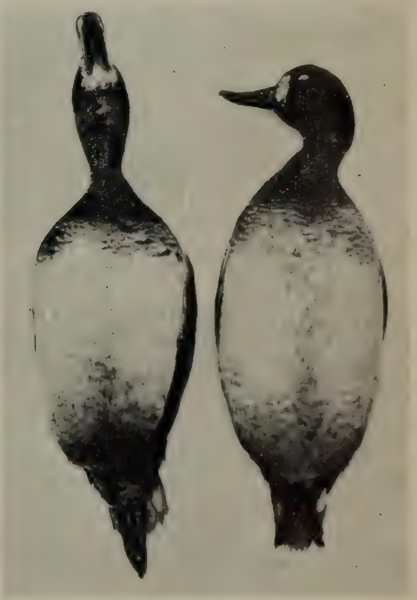
It is of considerable interest therefore that an individual of this sex and cross was provisionally identified by us at the WAGBI—Wildfowl Trust Experimental Reserve at Sevenoaks, Kent, on 30th December, 1969. The following field characteristics were noted:

It associated by preference with Tufted Duck from which it was recognised by being basically Pochard-shaped. When it joined with Pochard, which it seldom did, it was much more difficult to pick out.

In comparison with Tufted Duck, the bill was longer, the forehead flat, the rest of the head being round and lacking any vestige of a crest. The general appearance was much like a female Tufted Duck in plumage, though slightly paler on the back, while in flight it lacked the white wing-bar which appeared greyish. The iris appeared light yellow. The proximal half of the bill was blackish as was the terminal third which extended slightly on each side and included the nail. In between there was a broad blue sub-terminal band.

We considered it necessary to collect the bird to confirm the identity and for detailed study in comparison with the only other known female of the cross referred to earlier. A full description of the Norfolk specimen was published in our paper. Compared with the Norfolk specimen the Kent bird is more mature, darker and browner on the head, neck and breast, and greyer





Copyright photograph by Dr. Pamela Harrison

Hybrid Pochard x Tufted Duck Females
(*left*) Kent Specimen.
(*right*) Norfolk Specimen.

Hybrid Pochard x Tufted Duck Females
(*left*) Kent Specimen.
(*right*) Norfolk Specimen.

on the belly and vent. There is increased vermiculation on the back and flanks and more white on the face and chin, and there is rather more white on the distal half of the longest under tail coverts.

The tarsi and toes were bluish-grey but dusky over the joints, the nails were blackish and the web also dusky.

Measurements in mm.			*Norfolk Hybrid*	*Kent Hybrid*
Wing		=	203	206
Bill:	length from feather margin	=	42	41
	width at nostrils	=	19	19.5
	width at widest point	=	20.5	21.5
Nail		=	9.5 × 8.5	9 × 7
Tarsus		=	37	34
Middle toe without nail		=	58.5	61
Tail		=	60	64

These measurements compared with those for Pochard and Tufted Duck show that both individuals are intermediate in size:

		Pochard ♀♀	*Tufted Duck* ♀♀
Wing	=	201–212	189–202
Bill	=	43– 47	38– 41

A further female of this cross was provisionally identified on the reserve on 7th February, 1970. The bird was of the same typical Pochard-like shape, but was rather more like a female Tufted Duck, in that there was a slight but definite kink in place of the short crest of the female Tufted Duck. When it flew there was a definite whitish wing-bar on the secondaries.

This example was not collected and the identification cannot therefore be positive, although highly probable. It would seem to correspond to the 'Tufted Duck type' of this cross, such as we have already described in the drake (Gillham, Harrison and Harrison, *loc. cit.*).

ACKNOWLEDGMENTS

We are grateful to Mr. J. G. Goldsmith, Assistant Curator of the Castle Museum, Norwich, for the loan of the Norfolk specimen, and to Dr. Pamela Harrison for the photographs herein reproduced.

SUMMARY

A second example of a female hybrid between Pochard and Tufted Duck has been studied in the field, and has been examined as a museum specimen. A third has been provisionally identified in the field.

The female of this cross is probably not as unusual as the only three recorded specimens might suggest, and our observations show that it can be recognised in the field.

References:

Gillham, E., Harrison, J. M. and Harrison, J. G. 1965. A study of certain *Aythya* hybrids. *Wildfowl Trust*, 17th Ann. Rep. 49–65.

Perrins, C. M. 1961. The "Lesser Scaup" Problem. *British Birds*, 56: 49–54.

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be listed at the end of a contribution, in the same format as in the notice to contributors to the *Ibis* (see any 1969 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

Contributors are entitled to a maximum of ten free copies of the number of the *Bulletin* in which their contribution appears, provided that it exceeds one page of the *Bulletin*. Extra copies at cost price can be ordered through the Editor at the time of submission of the manuscript.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s*. for years up to 1968 (Vol. 88) and 7*s*. 6*d*. for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 7*s*. 6*d*., payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2.

24 JUN 1970

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

Bulletin of the

British Ornithologists' Club

Edited by
C. W. BENSON

C
R

Volume 90 No. 4 August 1970

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, Bt., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

P. F. R. Jackson

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1970 and 1971

15th September. Speaker: Professor Emil K. Urban. Subject: The bird colonies of Lake Shala, Ethiopia. Venue: The Criterion in Piccadilly, W.1.

17th November. Speaker: Mr. Murray Williams. Subject: New Zealand Wildfowl Research and Conservation. Venue: The Criterion in Piccadilly, W.1.

19th January 1971. Speaker: Dr. D. W. Snow. Subject: To be decided. Venue: The Criterion in Piccadilly, W.1.

16th March. Speaker: To be decided. Venue: The Criterion in Piccadilly, W.1.

18th May. Speaker: Dr. C. H. Fry. Subject: African Ornithology by Hovercraft. Venue: The Criterion in Piccadilly, W.1.

Bulletin of the BRITISH ORNITHOLOGISTS' CLUB

24 AUG 1970

Vol. 90 No. 4 Published: 20th August, 1970

The six hundred and sixty-fifth meeting of the Club was held at the Cafe Royal London, W.1 on Tuesday, 21st July, 1970, at 7 p.m.

Chairman: Dr. J. F. Monk; present: 18 members and 6 guests.

Mr. E. N. Wright addressed the Club on the problems arising from bird strikes on aircraft and discussed the various methods adopted and tested to reduce the hazards arising from this.

Annual General Meeting

The seventy-eighth Annual General Meeting of the British Ornithologists' Club was held at the Criterion, Piccadilly, London, W.1 at 6 p.m. on Tuesday, 19th May, 1970 with Dr. J. F. Monk in the chair.

The minutes of the previous Annual General Meeting (Bull. B.O.C. 89[3] 61–62) were read, approved and signed.

The minutes of the Special General Meeting held on 20th January, 1970 (Bull. B.O.C. 90[1]1) were read, approved and signed.

The Chairman reported that the number of free *Bulletins* supplied to authors had been reduced to ten copies following the amendment of Rule (10) at the Special General Meeting referred to above. He also said that the Club's photographic equipment had been removed from the Rembrandt Hotel, the ciné projector being kept at the present in the B.O.U. office and the remainder being in the possession of the Hon. Secretary. The Club's stock of old *Bulletins* is now kept by Mr. C. J. Mead in the house at Tring leased by him from the Club.

The Committee's report and the accounts for 1969 were then discussed. The Chairman said that twenty new members had joined the Club since the beginning of 1970. The Hon. Treasurer said that printing costs have increased by one-third since 1968 while the subscription had remained unchanged for eight years. In recent years the sale of back numbers of the *Bulletin* had been substantial and had been the chief means of meeting rising expenses but in 1969 the revenue from this source had been very small. Additional subscriptions would be a valuable source of income. There were about seventy subscribers but the Club did not get the full advantage of their subscription fees when the subscription came through a professional agency. The approval of the accounts was proposed by Mrs. B. P. Hall and seconded by Mr. R. E. F. Peal and approved by the meeting.

The Committee had been unable to find a nominee for election to the Committee willing to accept nomination. Mr. P. F. R. Jackson had been proposed in accordance with Rule (1) by Mr. M. W. Woodcock and the Hon. Secretary. There being no additional nominations to this and to those proposed by the Committee the following elections were made.

Mr. P. F. R. Jackson to the Committee vice
Mr. J. H. Elgood who retired by rotation
Mr. D. R. Calder as Hon. Secretary and
Mr. P. Tate as Hon Treasurer.

The re-election of the Auditors Messrs. W. B. Keen & Co. was proposed by Mrs. Bradley and seconded by Mr. Peter Tate and carried unanimously.

The resolutions to amend the Club's Rules proposed by the Committee were then discussed. It was agreed that a member about to be removed from the list of members should retain a right of appeal to the Club in general meeting and the fifth draft resolution was amended accordingly. It was further agreed that a member should have six months grace for payment of subscriptions and the sixth draft resolution was amended accordingly. Subject thereto the meeting approved the following resolutions without dissentient votes.

Resolution 1.

That Rule (1) be and it is hereby amended by the deletion in the first sentence after the words "Editor of the *Bulletin* to be elected for five years and who shall" of the words "at the end of that period not" and by the substitution for the words "the next" of the words "one further".

Resolution 2.

That Rule (1) be and it is hereby further amended by the deletion in the penultimate sentence of the words "with the notice convening the Annual General Meeting" and by the substitution in that sentence for the word "two" of the word "three" and in the last sentence for the word "one" of the word "two".

Resolution 3.

That Rule (1) be and it is hereby further amended by the addition of the following sentence at the end thereof, *viz:* "Where more than one member of the Committee shall be elected at a general meeting of the Club, for the purpose of determining the order for retirement the member whose surname precedes the other or others alphabetically shall be deemed to be the senior".

Resolution 4.

That Rule (2) be hereby deleted and in place thereof the following Rule be and it is hereby adopted:

(2) "Any member desiring to make a complaint of the manner in which the affairs of the Club are conducted must communicate his complaint in writing to the Chairman who will raise the complaint at the next meeting of the Committee for a decision, or if he considers it a matter for urgency, will call a special meeting of the Committee to deal with it".

Resolution 5.

That Rule (3) be and it is hereby amended by the deletion of all words after the word "deemed" and by the substitution in place thereof of the following words:

"by a majority of those present at a Committee meeting called for the purpose, to be prejudicial to the interests of the Club, that member shall be so informed in writing by the Secretary. After allowing reasonable time (not less than a clear fortnight after despatch of the letter by the Secretary) for a reply or an appearance in person before the Committee, the Committee shall have power to remove such member's name from the list of members subject to the member's right to appeal to a general meeting of the Club".

Resolution 6.

That Rule (4) be and it is hereby amended by the addition at the end of the first paragraph thereof of the following sentences:

"Subscriptions shall fall due for payment on 1st January of each year. If any member shall fail to pay his subscription within six months after it has become due and shall fail to pay after written notice from the Treasurer calling upon him to do so within one month from the date of such notice the Committee shall be entitled to terminate his membership without further notice".

Resolution 7.

That Rule (5) be and it is hereby amended by the deletion in the last sentence of the words "the Winter Session of the Club" and the substitution in place thereof of the words "any calendar year".

Resolution 8.

That Rule (8) be and it is hereby amended by the substitution in the second sentence thereof for the word "two" of the word "three".

Resolution 9.

That Rule (9) be and it is hereby amended by the deletion of the word "year" and by the substitution in place thereof of the words "any period of twelve months".

Resolution 10.

That Rule (11) be and it is hereby amended by the deletion of all the words following the word "Editor" where it appears for the first time.

Resolution 11.

That Rule (12) be and it is hereby amended by the addition in paragraph (a) after the word "shall", where it appears for the first time, of the words "subject to the terms of the bequest or gift".

There being no further business the meeting closed at 6.55 p.m.

The status of *Eos goodfellowi*

by D. T. Holyoak

Received 25th March, 1970

Ogilvie-Grant (1907) described a new lory of the genus *Eos* from two aviary birds captured on the island of Obi, Moluccas. These specimens do not appear to have been preserved, and other birds corresponding to their description have not hitherto been commented on, although the species is listed by Peters (1937).

While working through specimens of this genus in the British Museum (Natural History) I found one skin corresponding precisely to the description of *E. goodfellowi* (resembling *Eos bornea*, but with lavendar blue-thighs and ear coverts, and a faint blue suffusion on the belly), and two other specimens which appear to be intermediate between *goodfellowi* and *E. bornea* (blue tips to the red feathers of the thighs and ear coverts). The first of these was collected on the Kei Islands by the B.O.U. New Guinea expedition (a male in juvenile plumage, registration number 1910.12.28.101), and the others are labelled Amboina and Aru Islands respectively, the latter locality probably being an error. The Amboina bird is a female in juvenile plumage (registration number 1913.6.10.47), and the 'Aru Islands' bird is unsexed and in juvenile plumage (1889.1.20.155.).

Siebers (1930) suggested that the description of *Eos goodfellowi* refers to juveniles of *Eos bornea*, and examination of these specimens supports this. Other juvenile specimens of *Eos bornea* in the British Museum collection (from other localities) have a few blue tips to the red feathers of the thighs and ear coverts, and but for these feathers the specimens listed above are similar to other juveniles of *E. b. bornea* (Amboina), and *E. b. bernsteini* (Kei Is.) respectively.

References:
Ogilvie-Grant, W. R. 1907. *Eos goodfellowi* sp. nov. *Bull. Brit. Orn. Cl.* 19: 102.
Peters, J. L. 1937. *Check list of the birds of the world.* Cambridge, Mass. vol. III.
Siebers, H. C. 1930 Fauna Buruana, Aves. Treubia, 7, suppl.

The association of the Northern Carmine Bee-eater *Merops n. nubicus* with mammals, birds and motor vehicles in Ethiopia

by Jeffery Boswall

Received 19th February, 1970

The fact that the Northern Carmine Bee-eater *Merops n. nubicus* perches on the backs of other species, apparently first recorded by Baker (1867) and subsequently by a number of authors, is now well-established. That its reason for doing so is to use its steed as a "beater" also seems beyond doubt. The purpose of this short note is partly to add some further records of the use of animate perches (in particular, of the use of two "new" mammals and one "new" bird), but also to emphasise that the birds' association with these creatures (and also with moving motor vehicles) has another aspect: that they also follow *in flight* moving mammals, birds and motor vehicles to catch prey thus flushed.

OBSERVATIONS

In 1969 I visited the estate of Mitchell-Cotts at Dubte near Tendaho, Wollo Province, Ethiopia, on 1st April; and Awash National Park, Shoa Province, from 3rd to 7th April, from 8th to 26th September, and on 28th September.

Very briefly, my notes are as follows:

1st April	Several perched on the backs of goats *capra* sp.
3rd–7th April	Several Kori Bustards *Ardeotis kori* with single Bee-eaters on their backs. A bee-eater flew with the landrover alongside the vehicle holding station just outside the driver's window swooping down at intervals after prey flushed by the vehicle.
14th Sept.	Saw single bee-eaters on three occasions, flying along behind galloping Beisa Oryx *Oryx gazella beisa* at a distance of three to 10 metres.
15th Sept.	Among a herd of 132 Oryx six bee-eaters were present. When the herd gallops the birds fly either behind or alongside the antelopes at about shoulder height, occasionally swooping down as if after prey.
22nd Sept.	Among a party of about a dozen Ostriches *Struthio camelus*, two had single bee-eaters on their backs.
23rd Sept.	I followed one very approachable lone Oryx with an attendant bee-eater for about ten minutes. Twice the bird sallied after prey obviously put up by the moving mammal; once it flew a much greater distance in pursuit of prey obviously *not* flushed by the Oryx. Later we happened to stop the landrover about twenty metres from a bush on which a bee-eater was perched. Twice the bird, despite our presence outside the vehicle, flew over and hovered over the vehicle at about ten feet.
24th Sept.	Doug Fisher and Ian Robertson filmed two bee-eaters on the back of a bustard; and also a single bird that twice hawked after prey—on one occasion distant prey. They also saw a bee-eater perched on a Secretary Bird *Sagittarius*

serpentarius and filmed two others flying slowly along together behind the same Secretary Bird.

28th Sept. One bee-eater on a Camel *Camelus dromedarius*; three others on goats.

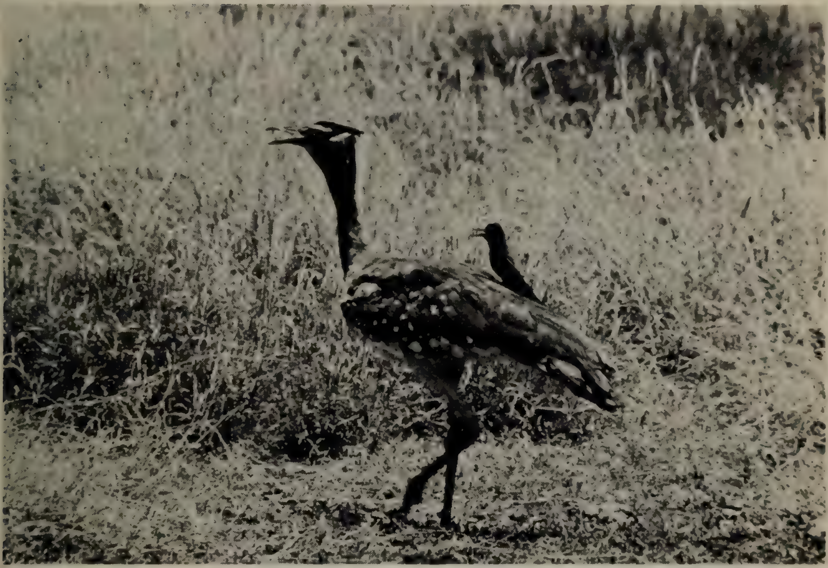


Photo: Douglas Fisher

Fig. 1 Arabian Bustard with Northern Carmine Bee-eater, near Tendaho, Wollo Province, Ethiopia. May 1970.

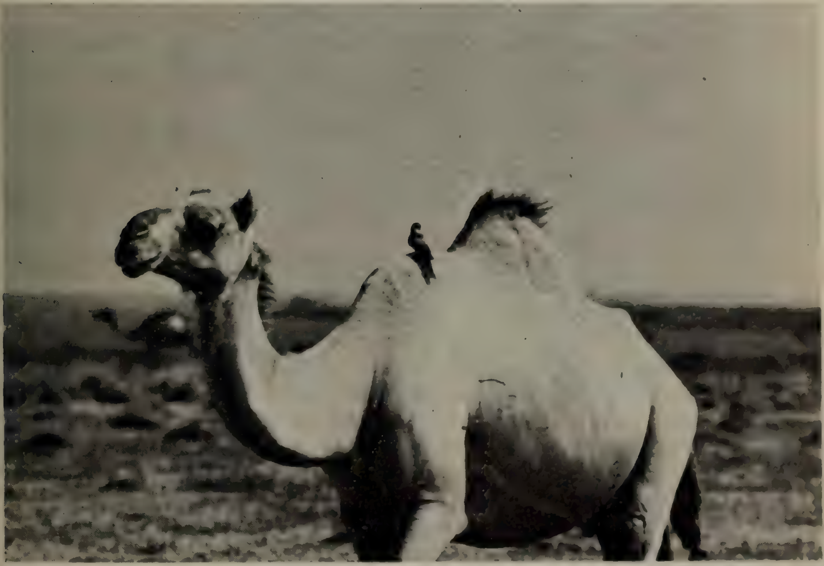


Photo: Douglas Fisher

Fig. 2 Camel with Northern Carmine Bee-eater, near Asaita, Wollo Province, Ethiopia. May 1970.

8th–16th Sept. Subsequent examination of film of oryx showed: (a) two bee-eaters perched simultaneously on an oryx; (b) that the usual position for the bee-eater is the highest point of the mammal's spine towards the rear end: and (c) that one oryx with a bee-eater in the usual position when it threw back its head (reason unknown) would be unable to reach the bee-eater with its horns; in the same position the bird also seems to be out of range of the mammal's tail.

Ian Robertson, an ecologist with a particular interest in antelopes, who had lived in the area for nearly a year, told me that he had "regularly" seen bee-eaters on the backs of Beisa Oryx and Kori Bustards and "rarely" on Secretary Birds and Wart Hogs *Phachochoerus aethiopicus*. He had more than once seen a bird attempt to land on the back of a Tufted Guinea Fowl *Numida meleagris* but the game bird would not allow it. He had never seen one on a Soemmering's Gazelle *Gazella soemmerringii* although it is a fairly common mammal in the park. This is puzzling.

Curtis Buer, a U.S. Peace Corps volunteer, had lived at Awash more than a year and he confirmed that in his experience bee-eaters will frequently follow a landrover.

DISCUSSION

A preliminary search of the English language-literature produced the following list of species on which this bee-eater has been seen to perch.

Ostrich *Struthio camelus* Van Someren 1945, North 1944, this paper
White Stork *Ciconia ciconia* Conacher 1970
Abdim's Stork *Ciconia abdimii* Baker 1867 (Mackworth-Praed 1946 refers to Baker), Neumann 1898, Aylmer 1944
Secretary Bird *Sagittarius serpentarius* This paper
Tufted Guinea Fowl *Numida meleagris* This paper (attempts at riding only)
Crowned Crane *Balearica pavonina* Guichard 1947
Arabian Bustard *Ardeotis arabs* Bannerman 1931, Cave 1946
Kori Bustard *Ardeotis kori* Neumann 1898, Moreau 1943, Jackson 1945, Van Someren 1945, Meinertzhagen 1959, Grimwood 1964, this paper
Burchell's Zebra *Equus burchelli* Grimwood 1964
Wart Hog *Phachochoerus aethiopicus* Meinertzhagen 1959, this paper
Camel *Camelus dromedarius* This paper
Domestic cattle (Bovidae) Thesiger & Meynell 1935
Domestic sheep (*Ovis* sp.) Neumann 1898, Bannerman 1931, Aylmer 1944, North 1944
Domestic goats (*Capra* sp.) Neumann 1898, Aylmer 1944, this paper
Gerenuk *Litocranius walleri* Grimwood 1964
Beisa Oryx *Oryx gazella beisa* This paper
Grant's Gazelle *Gazella granti* Grimwood 1964
Topi *Damaliscus korrigum* Grimwood 1964

In the area the species also uses inanimate perches like bushes, trees and roadside wires. Two of the above observations show that animate perches are also used simply as look-out positions and not only as beaters. The species is also a well-known attender at bush fires. Cheesman (1936) noticed this in Ethiopia, Cave and MacDonald (1955) refer to it in the Sudan.

The flight attendance on a moving motor vehicle, using it as a "beater" has only once previously been recorded (Jackson 1954). No one has yet seen a bee-eater riding on a car, but the hovering of the single bird above our landrover could suggest that this may yet be observed.

Jackson also found that the birds on one occasion followed him for the same purpose. That the species will fly alongside a car and a human being in pursuit of prey helps to confirm that similar attendance on galloping oryx is deliberate and not merely to "keep up". Praed and Grant (1952) say "they follow animals or even large birds such as Bustards for the insects they disturb".

Meinertzhagen (1959 p.222) claims that he had "a whole breeding colony" of the Southern Carmine Bee-eater *Merops nubicoides* "floating round me in the sunlight and catching insects I disturbed as I walked through the grass". (Meinertzhagen also says "On the Zambesi I have seen *M. n. nubicoides* on sheep and cattle" but he is the only person to have seen the Southern Bee-eater using animate perches.)

Fry (1969) points out that, unlike most of the other fifteen members of the bee-eater family endemic to Africa, the species *Merops nubicus* (which he regards incidentally as only racially distinct from *M. nubicoides*) is the only one that does not feed on honey-bees *Apis mellifera* and other airborne Hymenoptera, but preys instead mainly on locusts. The fact that the southern form is apparently unknown to perch on other creatures is interesting, although it has "the habit of following man or game for the insects they disturb" (Mackworth-Praed and Grant 1962). There is also a record of the southern form following a bird. M. P. Stuart Irwin and C. W. Benson (*in litt.*) on 4th February 1965, at Nata in north-east Botswana, saw two birds "following an *Ardeotis kori* and swooping down to within a few feet of the large bird as it walked through the long grass". The bee-eaters were obviously using the bustard as a beater.

Grimwood (1964) saw *Merops nubicus* using three species of large mammal at the north end of Lake Rudolf but added: "It was noticeable how they refrained from perching on Oryx, presumably because they could be swept off by the long horns". At Awash I saw only the one instance that allowed a possible interpretation of mammalian annoyance at an avian jockey. An oryx twice threw back its head, and was all the time wagging its tail as if it wanted to remove the bee-eater. But the bird was immune from both in its usual position at the highest point of the spine. It could be that this is why the bird chooses this position, but my firm impression is that oryx are usually indifferent to the presence of riders.

It is interesting to speculate on whether in the case of a regular association like *Oryx-Merops* the value is not merely commensal but symbiotic, as it is with *Buphagus* (Meinertzhagen 1959 pp. 210–11) which acts as a sentinel, warning game of impending danger.

One wonders also whether the bee-eater might not also roost on the backs of game animals to save the trouble of having to find them again in the morning as *Buphagus* is also known to do (Dowsett 1968, Meinertzhagen 1959 p. 198).

Lastly, it is worth adding that the breeding birds re-occupy the Awash colony in late February/early March, and may still be feeding young as late as early July.

SUMMARY

The Northern Carmine Bee-eater *Merops n. nubicus*, when hunting, will use inanimate perches, including telegraph wires, as look-outs. It uses animate perches similarly, but also as "beaters" both by perching on the animals themselves and by following them in flight. Human beings and motor vehicles are also followed in flight (the bird also attends bush fires). The paper lists this bee-eater as perching on four species of domestic mammal (one "new"),

six species of wild mammal (one "new"), and eight species of wild bird (one "new").

References:
Aylmer, G. 1944. The Use of Animate Perches by the Carmine Bee-eater. *Ibis*, 86: 554.
Baker, Sir Samuel 1867. *The Nile Tributaries of Abyssinia*. London.
Bannerman, D. A. 1931. *Birds of Tropical West Africa*. Oliver and Boyd.
Cave, F. O. 1946. Some further notes on *Merops-Ardeotis* perching associations, *Ibis*, 88: 236–238.
Cave, F. O. and MacDonald, J. D. 1955. *Birds of the Sudan*. Oliver and Boyd. Edinburgh and London.
Cheesman, R. E. 1936. *Lake Tana and the Blue Nile*. London.
Conacher, G. 1970. Note on two White Storks each carrying Carmine Bee-eater. *Newsletter No.* 37 Ethiopian Wildlife and Natural History Society.
Dowsett, R. J. 1968. Oxpeckers *Buphagus* spp. on game animals at night. *Bull. Br. Orn. Cl.*, 88(7): 130–132.
Fry, C. H. 1969. The Evolution and Systematics of Bee-eaters (Meropidae). *Ibis*, 111: 557–591
Grimwood, Ian 1964. The Northern Carmine Bee-eater *Merops nubicus* Gmelin using animal perches. *Bull. Br. Orn. Cl.*, 84(6): 105–106.
Guichard, K. M. 1947. Birds of the Inundation Zone of the River Niger, French Sudan. *Ibis*, 89: 450–489.
Jackson, T. H. E. 1945. Some *Merops-Ardeotis* Perching Associations in Northern Kenya. *Ibis*, 87: 284–286.
Mackworth-Praed, C. W. 1946. Animate Perch Associations. *Ibis*, 88: 132.
Mackworth-Praed, C. W. and Grant, C. H. B. 1952. *Birds of Eastern and North-eastern Africa*. Longmans.
— 1962. *African Handbook of Birds Series* 2. Longmans.
Meinertzhagen, R. 1959. *Pirates and Predators*. Oliver and Boyd. Edinburgh.
Moreau, R. E. 1943. Dr. J. G. Myers on Migrants and on Bird Insect-Nesting Associations in the Sudan. *Ibis*, 85: 97–101.
Neumann, Alfred 1898. *Elephant Hunting in East Africa*. London.
Nickerson, B. 1958. Some observations on the Carmine Bee-eater in the French Sudan. *Ibis*, 100: 454–456.
North, M. E. W. 1944. The Use of Animate Perches by the Carmine Bee-eater and other African species. *Ibis*, 86: 171–176.
Someren, V. G. L. van 1945. The Use of Animate Perches. *Ibis*, 87: 109.
Thesiger, W. and Meynell, M. 1935. On a collection of birds from Danakil, Abyssinia. *Ibis*, 5 (Series 13): 774–807.

POSTSCRIPT

I returned to the cotton plantation of Mitchell-Cotts in the Wollo Province for the period 2nd to 16th May, 1970. Up to five *Merops nubicus* at a time were seen perching on camels, and the birds were regularly observed on goats and Arabian Bustards. On two occasions they were being carried by ostriches. From one to twelve birds were seen following landrovers on grassy tracks, or tractors ploughing the cotton fields. During the same period Dr. Sigrun Klug saw a *Merops nubicus* perch briefly on the back of a Black-headed Heron *Ardea melanocephala*, and Deiter Plage saw one of a dozen birds attending a tractor actually perch on the moving vehicle for about thirty seconds. These last two observations are quite new.

[From experience in Zambia, R. J. Dowsett writes that he has never found the Southern Carmine Bee-eater associating with any animal or vehicle, although it is abundant in the Luangwa Valley, where he spent most of his time during 1965–67. He has often found it at bush fires and hawking from a perch. However, M. Milton has recently recorded these bee-eaters in Rhodesia using guineafowl *Numida meleagris* as "beaters" and apparently even perching on them (see *Honeyguide*, Bulletin of the Rhodesian Ornithological Society, 61, 1970: 8). But such behaviour must be rare in the southern form. On the other hand, Dowsett finds that the Blue-cheeked Bee-eater *Merops superciliosus persicus* commonly feeds on insects disturbed by vehicles, in southern Zambia, following them in flight for several hundred yards on occasion—Ed.]

Observations from a water bird colony, Lake Tana Ethiopia

by Sigrun Klug and Jeffery Boswall

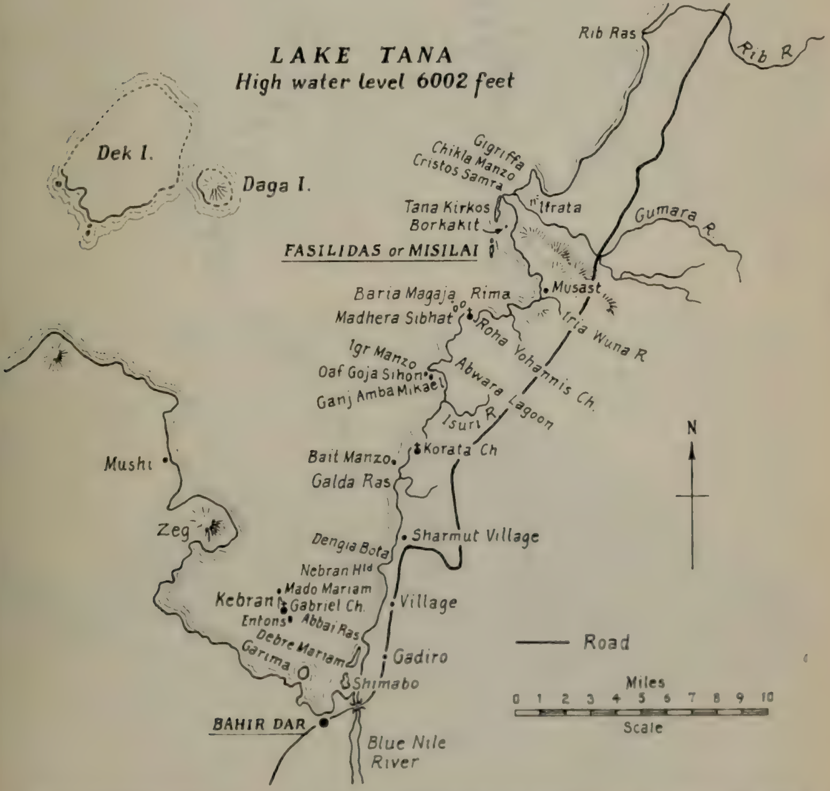
Received 13th January, 1970

INTRODUCTION

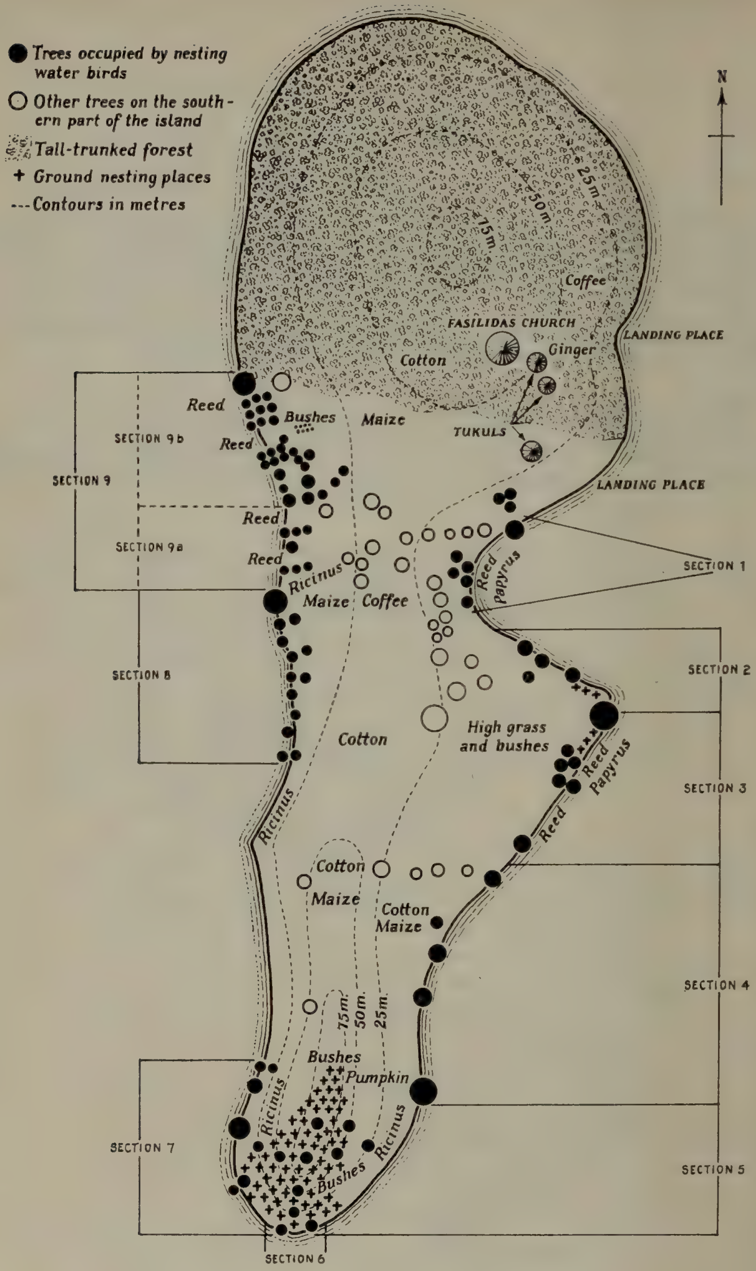
In company with Captain Getachew Taffera and Douglas Fisher we were resident on Fasilidas Island in Lake Tana, Begemder Province, Ethiopia, from 7th to 12th October, 1969. The purpose of the visit was to film the water-bird colony there for BBC television, and this occupied most of our attention. However, time was found to make certain ornithological and botanical observations and these are set out in this paper.

The Island

The island is about 43 kilometres by water from Bahir Dar, the main town on the shores of Lake Tana. The lake itself is a thousand square miles in extent and lies at 6,000 feet in the northern highlands of Ethiopia. There are


LAKE TANA
High water level 6002 feet
Rib Ras
Rib R.
Dek I.
Daga I.
Gigriffa
Chikla Manzo
Cristos Samra
Tana Kirkos
Borkakit
Ifrata
Gumara R.
FASILIDAS or MISILAI
Baria Magaja
Rima
Musast
Madhera Sibhat
Iria Wuna R
Roha Yohannis Ch.
Igr Manzo
Oaf Goja Sihon
Ganj Amba Mikael
Abwara Lagoon
Isuri R.
Bait Manzo
Korata Ch
Galda Ras
Mushi
Zeg
N
Dengia Bota
Sharmut Village
Nebran Hld
Mado Mariam
Kebran
Gabriel Ch.
Village
Entons
Abbai Ras
Debre Mariam
Garima
Gadiro
Road
Shimabo
Miles
0 1 2 3 4 5 6 7 8 9 10
Scale
BAHIR DAR
Blue Nile River

The South-eastern part of Lake Tana, Ethiopia, to show the position of Fasilidas Island in relation to Bahir Dar. Based on part of the map in Cheesman (1936), with amendments. Drawn by Eric Robson.



● Trees occupied by nesting water birds
○ Other trees on the southern part of the island
Tall-trunked forest
+ Ground nesting places
--- Contours in metres
N
25 m
50 m
75 m
Coffee
FASILIDAS CHURCH
LANDING PLACE
Ginger
Cotton
TUKULS
Reed
Bushes
Maize
SECTION 9b
SECTION 9
SECTION 9a
LANDING PLACE
SECTION 1
Ricinus
Coffee
Papyrus
SECTION 8
SECTION 2
High grass and bushes
SECTION 3
Cotton
Maize
SECTION 4
75 m.
50 m.
25 m.
Pumpkin
SECTION 7
SECTION 5
SECTION 6

Fasilidas Island, Lake Tana, to show distribution of nesting birds. Re-drawn from S.K.'s original field sketches by Eric Robson. The sections of the coast refer to photographs taken from a boat, and deposited in the Edward Grey Institute of Field Ornithology at Oxford, and at the Staatliches Museum für Naturkunde in Stuttgart.

many islands in the lake, particularly round the shore, and these were first mapped in detail by Cheesman (1936). He refers to the island with the waterbird colony as Misilai Island, mentioning also that the one remaining church was called Fasilidas. Currently the island is referred to locally as Fasilidas. It is about 900 metres long, and an average of 250 metres wide; at its highest points it rises to about 75 metres above the level of the lake. These measurements are very approximate. Its main axis lies almost exactly north-south. Immediately to the north is a small "extension" island across perhaps 100 metres of water, and several kilometres further north is the better-known island called Tana Kirkos. Fasilidas lies one or two kilometres off the eastern shore of Lake Tana.

Previous ornithological observations

Cheesman (1936: 171) first visited the island on 1st April, 1933, and mention is made of a colony of the Little Egret *Egretta garzetta* in Cheesman and Sclater (1935–36), but see under Yellow-billed Egret *Egretta intermedia* in "Notes on Species" below. Observations by Dr. F. Schäuffele are summarised by Schäuffele and Schüz (1968), and Schüz (1969) describes the results of his own one-day visit on 21st October, 1967.

The vegetation

The normal vegetation on the mainland shore of Lake Tana shows a picture that can be found in parkland or savannas with very big, single standing trees (mostly *Ficus vasta*, *F. dahra*, *Cordis africana*), bush-forests with many different species, Leguminosae of different kinds, but only a few Acacia trees (Combretum, Terminalia, Gardenia, Cussonia, Croton, Dombeya), bushes with many tendrils, and thorn scrub *Acanthus polystachius* and *Solanum campylacanthum*. Tall-trunked forests are seen near Bahir Dar only on Kevran (=Kebran) and Enton islands. The vegetation near the water is either papyrus and reed or trees, mostly Dokoma trees (*Syzygium guineense*). On the bark of these trees grow many ferns, mosses and orchids. In the deeper water a white

The southernmost tip of the island, i.e. section 6 on the map. The species visible include Sacred Ibis and Openbill Stork, 12th October, 1969. Photo: J. Boswall.

flowering bush *Kanalia laniflora* (Asclepidaceae) can be found. This description of the vegetation is based on O. Sebald (1968); see also Cufondotis (1968).

The vegetation of Fasilidas Island appeared to be in no way significantly different from that which is described for the mainland shore. On the shore of Fasilidas Island there are a lot of Dokoma trees with fern and moss and a few wild fig trees. Papyrus and reed grow round the small bay on the eastern

Part of the main Sacred Ibis colony, looking south-west by south. Openbill Storks are also visible, 12th October, 1969. Photo: J. Boswall.

Nesting trees on the west coast of Fasilidas Island: White-necked Cormorants, Long-tailed Cormorants and Yellow-billed Egrets are visible, 12th October, 1969. Photo: J. Boswall.

side, and on the south-east facing shore; but on the western side papyrus and reed are scanty. The northern part of the island is covered with a tall-trunked forest. On the southern part of the island the vegetation is much more scanty, because of the rocky nature of the terrain. Among these wild growing plants the human inhabitants (the priest Abe Wolde Jesus and a number of boys) are trying to cultivate maize, cotton, coffee and ginger in all parts on the island where it is possible.

The water birds, which are nesting in trees, prefer the waterside ones. In fact, every tree round the shore of the southern part of the island is occupied by birds. On the northern part no nesting birds were seen, only a number of resting Night Herons *Nycticorax nycticorax*. The birds which nest on "inland" trees do not choose a special kind of tree; so there is no apparent correlation between specific vegetation and nesting places. The choice of Fasilidas Island itself must surely be independent of the vegetation type. More probable influences are proximity to a particularly favourable feeding area on or near the mainland shore, and the number and behaviour of the island's human residents at the time of the original colonisation.

The water-birds

The ornithology of the island is dominated by a mixed colony of several thousand pairs of water birds of eleven species:

White-necked Cormorant *Phalacrocorax carbo*
Long-tailed Cormorant *P. africanus*
Darter *Anhinga rufa*
Black-headed Heron *Ardea melanocephala*
Yellow-billed Egret *Egretta intermedia*
Cattle Egret *Bubulcus ibis*
Squacco Heron *Ardeola ralloides*
Night Heron *Nycticorax nycticorax*
Open-billed Stork *Anastomus lamelligerus*
Sacred Ibis *Threskiornis aethiopicus*
African Spoonbill *Platalea alba*

Praed and Grant (1952) specifically mention that Long-tailed Cormorants, Darters, Yellow-billed Egrets, Cattle Egrets, Night Herons and Sacred Ibises are known to nest in company with other species. Of the remaining five, J. B. has seen Black-headed Herons and Squacco Herons in a mixed colony in April, 1969, at the Hot Springs of the Awash National Park in Ethiopia. Feely (1964) saw Black-headed Herons, Openbills, African Spoonbills and three other water-bird species nesting together in Zambia; and in the same country Benson and Irwin (1967) mention a mixed colony of at least seven species including Squacco Heron, Night Heron, Long-tailed Cormorant and Openbill. It seems likely that White-necked Cormorants nest with other species. [Communal nesting by Long-tailed Cormorants, Darters and Cattle Egrets has been established by Bowen *et al.* (1962)].

Two of the species had not previously been recorded as nesting on Fasilidas: the Cattle Egret and the Squacco Heron.

With the exception of the Sacred Ibis, most of which were breeding on rocks and only a few in trees, all species were nesting arboreally. As to the distribution of the birds, it must be emphasised that it is only the southern two-thirds of the island that is favoured by the birds. Secondly, it is clear that, regardless of the species of trees, the birds prefer those closest to the water. Such waterside trees were usually occupied by a wide variety of species—a truly "mixed" colony. Only two species also nested on "inland" trees: the Yellow-billed Egret and the African Spoonbill. The total number of trees occupied by birds was approximately 90 (see map).

One remarkable feature of the colony was the tameness of the birds. Only the closest approach would put them out of the trees. We were able to camp within 20 yards of a colony of *Platalea alba* without causing the slightest disturbance.

A few White-necked Cormorants were seen fishing casually in the immediate vicinity of Fasilidas, and a few individuals of several other species could be seen feeding on the rocky shore; otherwise the birds of all species except the least common ones, *Bubulcus ibis* and *Ardeola ralloides*, were seen to make regular flights to a mainland locality north-east by north of the island. A glance at Cheesman's map suggests that they must forage in the basin and estuary of the Gumara river (see map). The chosen course was the only one that seemed to be taken, and the regular "trafficking" to and fro was a marked feature of the birds' daily routine. The most conspicuous users of the "highway" were Yellow-billed Egret, African Spoonbill and Sacred Ibis. At dusk, and again at dawn, Night Herons followed the same flight path.

Notes on species

White-necked Cormorant *Phalacrocorax carbo*. About 40 pairs, feeding full-size young in nests sited near the tops of trees. Cheesman found it "plentiful on Lake Tana" but saw no evidence of nesting.

Long-tailed Cormorant *Phalacrocorax africanus*. So far as we could see, all the young had left the nest and were perched on tree branches; a few were seen in the water round the island. Those in the trees were being fed by parents, although they were fully grown. The number of *birds* (not pairs) estimated to be present was about 500. Almost all were immature, doubtless born this breeding season. A November female shot by Cheesman showed signs of having bred recently. He had no other evidence of nesting but assumed they must breed in the area.

Darter *Anhinga rufa*. About 15 pairs feeding young as large as themselves. The birds were occupying only two of the larger waterside trees. Praed and Grant (1952) say "They breed with Cormorants and Herons but there are generally not more than ten or twelve pairs of Darters in each colony". Cheesman thought they probably nested in the area.

Black-headed Heron *Ardea melanocephala*. About 30 pairs scattered round the waterbird colony. Almost full-size young, mostly in nests, being fed by adults. (There is a colony of perhaps 20 pairs in the trees around the church at Bahir Dar. J. B. saw considerable activity there in April, 1969, less in October.)

Great White Egret *Egretta alba*. Schäuffele and Schüz (1968), and Schüz (1969) say that a few may be breeding on Fasilidas, but no nests were found. We saw no birds of this species. Variability in the size of *E. intermedia* which we ourselves found initially puzzling may have led Schüz to suppose that *E. alba* might be present.

Little Egret *Egretta garzetta*. We agree with Schüz that Cheesman (in Cheesman and Sclater 1935–36) must have mistaken the nests of *E. intermedia* for *E. garzetta*. No birds were present during Cheesman's visit on 1st April: he saw only empty nests and corpses. (J. B. later saw a few Little Egrets feeding in pools alongside the road in the vicinity of the Gumara and Rib rivers.)

Yellow-billed Egret *Egretta intermedia*. Easily the commonest nesting water bird; probably something of the order of a thousand pairs, distributed throughout the colony including some "inland" trees. The large majority of the offspring were almost as large as their parents and were moving about fairly freely in the tree tops. We would like to emphasise that we cannot be sure that all these birds were young of the season. If some were non-breeding one- or two-year olds, then our estimate of breeding pairs may be high. However, some young were smaller, a few very small, and in one tree eggs were seen. The larger young closely resembled the adults, having the same coloured soft parts (yellow bill, all black legs), but can best be distinguished by absence of "aigrette" feathers.

Cattle Egret *Bubulcus ibis*. Not previously recorded as a nester on Fasilidas. We estimated perhaps 25 pairs. Large young were being fed on nests or branches of trees, and a goodly number of newly-fledged (or possibly one- or two-year old non-breeding) Cattle Egrets were about the island.

Squacco Heron *Ardeola ralloides*. Not previously recorded nesting. Perhaps five pairs. Full size young in two trees on east side of island, one was receiving food from an adult.

Night Heron *Nycticorax nycticorax*. Well grown young on branches or in nests occasionally being fed by day. This species is very much less conspicuous, often hugging the "centres" of trees. "Perhaps 100 pairs" one of us thought until we kept watch from 05.40 to 06.40 hours on 12th October, and counted 868 Night Herons returning from a night's hunting! "400 pairs plus" we would now suggest. The return flight at dawn peaked at about 06.00 hours; the ten-minute totals for the hour's watch give 97, 357, 284, 109, 20 and 1. We observed sunrise over the distant low hills at 06.25 hours.

Openbill Stork *Anastomus lamelligerus*. Schüz estimated 15 pairs in 1967; we estimate 20 pairs. All were nesting in trees at the southernmost tip of the island. The visible young in the nest varied from naked creatures about 15 cms. long to feathered birds half the size of their parents.

Sacred Ibis *Threskiornis aethiopicus*. Number of nesting pairs difficult to estimate: perhaps about 500. Nests contained anything from unhatched eggs onwards; birds as big as their parents (except for the length of the bill) were fairly numerous, but none was seen to fly. A majority of offspring were probably three-quarters grown. Friedmann (1930) says "According to Zedlitz the breeding season of this bird in northern Ethiopia begins not earlier than May, while Erlanger judged that in southern Ethiopia it starts about the end of March". Emil K. Urban tells me that on Lake Shala in the Ethiopian Rift the birds nest in March, April and May. The main area for the species is on the ground on the central rocky spine at the south end of the island, though a few ground nesters can also be seen on the point opposite the landing place. Otherwise there are only scattered pairs on the trees.

African Spoonbill *Platalea alba*. Perhaps 30 of the 50 or so pairs were concentrated on some "inland" trees near the north-east corner of the colony; the rest were scattered singles in with the other species. Most young about three-quarters adult size, but some had left the nest and were still being fed.

Other birds

These included unidentified ducks, eagles, gulls, swallows, pigeons, starlings, sunbirds and other small passerines. A pair of Fish Eagles *Cuncuma vocifer* were active at a nest. An Egyptian Goose *Alopochen aegyptiacus* was regularly seen at the same corner of the island and may have had a mate on eggs. Seven Crowned Cranes *Balearica pavonina*, several Pink-backed Pelicans *Pelecanus rufescens*, and an Osprey *Pandion haliaetus* were seen over the water. Three species of kingfisher observed were the Pied *Ceryle rudis*, the Pygmy *Ispidina picta* and the Grey-headed *Halcyon leucocephala*.

Other vertebrates

Monitor Lizards *Varunus niloticus* were seen at intervals on the island. Grunting Hippopotami *Hippopotamus amphibius* were heard across the water from the mainland shore. We were told that a number had also recently been seen near Bahir Dar. It is clear that the species is not extinct in Lake Tana. As long ago as 1935, Cheesman wrote "A few Hippopotami are left in Lake Tana". An unidentified brown snake about one metre long was also observed on Fasilidas.

SUMMARY

During the period 7th to 12th October, 1969, an attempt was made to census the water bird colony on Fasilidas Island, Lake Tana, Ethiopia.

Several thousand pairs of water birds of eleven species were nesting: *Phalacrocorax carbo* c. 40 pairs; *P. africanus* c. 500 birds (*not* pairs) mostly young ones; *Anhinga rufa* c. 15 pairs; *Ardea melanocephala* c. 30 pairs; *Egretta intermedia* very approximately 1,000 pairs; *Bubulcus ibis* c. 25 pairs; *Ardeola ralloides* c. 5 pairs; *Nycticorax nycticorax* c. 400 pairs; *Anastomus lamelligerus* c. 20 pairs; *Threskiornis aethiopicus* c. 500 pairs; *Platalea alba* c. 50 pairs. Most species were feeding large young.

ZUSAMMENFASSUNG

Während eines Aufenthaltes auf der Fasilidas Insel (Tanasee, Athiopien) vom 7–12 Oktober 1969 hatten wir Gelegenheit, die dort brütenden Wasservögel zu beobachten. Mehrere tausend Paare elf verschiedener Arten nisteten auf der Insel: *Phalacrocorax carbo* ca 40 Paare; *P. africanus* ca 500 Vogel (*nicht* Paare) meist ausgewachsene Jungvögel; *Anhinga rufa* ca 15 Paare; *Ardea melanocephala* ca 30 Paare; *Egretta intermedia* annähernd 1,000 Paare; *Bubulcus ibis* ca 25 Paare; *Ardeola ralloides* ca 5 Paare; *Nycticorax nycticorax* ca 400 Paare; *Anastomas lamelligerus* ca 20 Paare; *Threskiornis aethiopicus* ca 500 Paare. Alle diese Vögel nisteten im südlichen Teil der Insel. Während die Heiligen Ibisse hauptsächlich auf der Felsen brüteten, bevozugten die anderen Arten die entlang der Küste wachsenden Bäume als Nistplätze.

ACKNOWLEDGMENTS

Dr. Friedrich Schäuffele of the Felege-Hiwot Hospital at Bahir Dar first drew the attention of J. B. to the existence of the water bird colony on Fasilidas Island. Dr. E. Schüz commented helpfully on an earlier draft of the paper. Help with the botanical identification was received from Kurt Hildebrandt and Michael Gilbert. Eric Robson kindly drew the maps. The very helpful response of Lakew Berhane of the Department of Marine Head Office in Addis Ababa, and of the staff of the Lake Tana Transport Office at Bahir Dar, particularly Captain Tekle, is gratefully acknowledged.

References:

Benson, C. W., and Irwin, M. P. Stuart. 1967. A contribution to the ornithology of Zambia. *Zambia Mus. Papers*, No. I, xiii + 139 pp.

Bowen, W., Gardiner, N., Harris, B. J. and Thomas, J. D. 1962. Communal nesting of *Phalacrocorax africanus*, *Bubulcus ibis* and *Anhinga rufa* in Southern Ghana. *Ibis*, 104: 246–247.

Cheesman, R. E. 1935. Lake Tana and its Islands. *Geogr. J.* 85(6): 489–505.

— 1936. *Lake Tana and the Blue Nile.* Macmillan, London.

— and Sclater, W. L. 1935–36. On a collection of birds from North-west Ethiopia. *Ibis* 84: 151–191, 297–329, 594–622; 85: 163–199.

Cufodontis, C. 1968. Crassulaceae, Celastraceae, Thymelaeaceae and Compositae aus den Tana-See-Gebiet und den Semyen-Gebirge (Athiopien). *Stuggart Beitr. sur Naturkunde* No. 195.

Feely, J. M. 1964. Heron and stork breeding colonies in the Luangwa Valley. *Puku*, 2: 76–77.
Friedmann, H. 1930. Birds collected by the Childs Frick Expedition to Ethiopia and Kenya Colony. *Smithsonian Institution United States National Museum Bulletin*, 153.
Praed, C. W. Mackworth, and Grant, C. H. B. 1952. *Birds of Eastern and North-eastern Africa*. Vol. I. Longman, London.
Sebald, O. 1968. Bericht über botanische Studein und Sammlungen am Tanasee und im Semyen-Gebirge (Athiopien). *Stuttgart Beitr. zur Naturkunde*, No. 194, 40 pp.
Schäuffele, F. and Schüz, E. 1968. Eine Stelzvogel- und Scharben-Kolonie im Tanasee. *J. Orn.*, 109: 232–234.
Schüz, E. 1968. Eine neue Vogelkolonie am Tanasee in Athiopien. *Kosmos*, 64: 368–369.
— 1969. Ornithologischer Oktober-Besuch am Tana-See (und bei Addis Ababa), Athiopien. *Stuttgart Beitr. zur Naturkunde*, No. 189, 43 pp.

The Daily Altitudinal Movement of the White-collared Pigeon *Columba albitorques* in the High Simien, Ethiopia

by Jeffery Boswall and Montagu Demment

Received 11th February, 1970

At the suggestion of Derek Goodwin we have prepared this note on a daily altitudinal movement of White-collared Pigeons *Columba albitorques*. It is one of the endemic highland species of Ethiopia and is found, according to Praed and Grant (1952) in "Eritrea to central Abyssinia". The High Simien is the loftiest mountain range in Ethiopia and includes the highest mountain in the Empire, Ras Dejen, 15,158 feet. The range is bounded on three sides by an escarpment that rises 5,000-odd feet from the lowlands below.

One of us, J. B., visited the Simien mountains in March and April 1965 and again from 16th October to 5th November 1969. M.D. was resident on the Geech plateau for most of the period August 1968 to November 1969. This short paper summarises the impressions of both of us.

The large majority of the observations were made from the Geech plateau. By day the birds are seen regularly on this plateau, which averages well over 12,000 feet, and also about the cliffs. In the afternoon some, if not all, the birds go down to the lowlands. Their headlong descent at high speed is a most spectacular piece of flying. In fact, to the uninitiated person, it can be quite frightening as the birds whizz past him, the wind whistling through their primaries. They usually fly within 20 feet of the slope and, on reaching a sheer precipice, drop and actually *fly* downwards at a speed that can hardly be less than 75 m.p.h., and could be more. The reason for the high speed could be to reduce the possibility of attacks by falcons.

On the afternoon of 30th October 1969 we kept watch from a point part way down the escarpment, at about 10,900 feet, just below a butress called Sederek and counted the birds. They thus hurtled down the slope towards us, wings held back, and dipped over the cliff edge out of sight, doubtless dropping most of the way to the lowlands below, though it was not possible to actually observe this due to the nature of the terrain. On 17th November M.D. watched from the top of the escarpment 2 kms. south-east of Sederek. The daily altitudinal range would thus be from about 12,000 feet to about 7,000 feet. The number of birds totalled for the two days, totalled for each half-hour from 14.00—14.30, to 17.30—18.00 hours were: 3, 9, 10, 16, 72, 56, 55 and 5. The frequency of party size, also totalled for the two days, was: singles, 36; two, 20; three, 7; four, 6; five, 1; six, 4; seven, 1; eight, 2; nine, 3; ten, 1; eleven, 2.

In the morning flocks of up to 50 birds, but usually of about 25, spiral their way slowly up, usually at about 8 or 9 a.m. Sometimes they rest on the cliff edge before moving "inland" on to the plateau to feed. As might be expected, maximum numbers were seen at the lowest point of the escarpment, at the head of the Jinbar Valley, about 11,800 feet, between Emiet Gogo and Amba Ras.

During the day many birds are seen feeding in the barley fields around Geech village. Guichard (1960) says that in the Addis Ababa region the species is common on the high plateau, sometimes flocking in hundreds and doing considerable damage to newly sown wheat in June. Cultivation in Simien can be seen as high as 12,500 feet on the western side of Ras Dejen and 13,800 feet on the eastern side. We saw White-collared Pigeons up to 14,500 feet.

Night-time temperatures on the Geech plateau average 0° Centigrade: day-time temperatures about 22° Centigrade (based on a year's data by M.D.).

Birds are regularly seen about the highest parts of the cliffs where one gets the impression that at least some may nest. On 28th October, during a three-hour watch, J.B. saw many chases, doubtless of a sexual nature, and several display flights. In these last the bird gives a few noisy flaps of the wings, followed by a brief level glide with the wings stiffly raised at a shallow angle. The cooing rhythm is usually "Ooh, ooooh" or sometimes "Ooh, ooh, ooh, ooooh*ooh*". Pitwell and Goodwin (1964) do not mention the song but the descriptions by Pitwell and Taibel in Goodwin (1967) agree with ours for the advertising coo.

Only two published references to this behaviour are known to us. Robert Cheesman (Cheesman and Sclater 1935) says: "These pigeons roost in the cliffs of the Big Abbai (Blue Nile) canyon and those tributaries with steep-sided chasms that cut into the high plateau. They come to feed on the corn lands of the high plateau at about 8,000 feet, and in the evening return in flocks from 50 to 100, and on reaching the edge of the ravine hurl themselves over, dropping several hundreds of feet in an instant of time. They are always fast flyers". Brown (1965 p.56) also observed the movement in Simien: "When spying in the evening a thousand feet or so below the top of the cliff one would be conscious of a sound of rockets rushing past. These were the pigeons shooting down from the top of the escarpment to some chosen roosting cave, perhaps 2,000 feet below. They rushed down the crag in the evening in ones and twos, but at about nine in the morning would be seen laboriously climbing up to the top again". We feel sure that 2,000 feet is an underestimate.

Derek Goodwin tells us that converse daily movements—roosting high, feeding low—have been recorded for *Columba leuconota* in eastern Tibet (Schäfer 1938), *C. arquatrix* in Africa (van Someren 1949, Verheyen 1955) and for *Lopholaimus antarcticus* in Australia (Frith 1955). Of these the Snow Pigeons of Asia were similar to our White-collared Pigeons in that they were feeding on cultivated land (grain stubbles).

SUMMARY

In the High Simien mountains of Ethiopia *Columba albitorques* performs a daily altitudinal movement rising from c.7,000 to c.12,000 feet each morning and returning in the afternoon. The birds feed on the plateau, and are presumed to roost in caves at the lower level.

References:

Brown, L. H. (1965). *Ethiopian Episode*. Country Life, London.

Cheesman, R. E. and Sclater, W. L. (1935). On a collection of birds from North-western Abyssinia. Part II. *Ibis*, XIII: 5: 297–329.
Frith, H. 1957. Food Habits of the Topknot Pigeon. *Emu*, 57: 341–345.
Goodwin, D. 1967. *Pigeons and Doves of the World.* British Museum (Natural History).
Guichard, K. M. 1950. A Summary of the Birds of the Addis Ababa Region, Ethiopia. *J. E. African Nat. Hist. Soc.*, 19(5): 154–181.
Mackworth Praed, C. W. and Grant, C. H. B. 1952. *Birds of Eastern and North Eastern Africa.* Vol. 1. Longmans, London.
Pitwell, L. R. and Goodwin, D. 1964. Some observations on pigeons in Addis Ababa. *Bull. Br. Orn. Cl.*, 84: 41–45.
Schäfer, E. 1938. Ornithologische Ergebnisse zweier Forschungsreisung nach Tibet. *J. Orn.*, 86:
Van Someren, V. G. L. and G. R. C. 1949. The Birds of Bwamba. Special Suppl., *Uganda Journal*, 13: 24–25.
Verheyen, R. 1955. Le Pigeon Bleu (*Columba arquatrix* Temm.) du Ruwenzori. *Gerfaut*, 1955: 127–145.

Short notes on the birds of Fezzan and Tripolitania

by C. Erard

Received 10th March, 1970

After reading the notes by Bundy and Morgan, we thought it would be worth giving a brief selection from some observations made during the expedition by the C.R.M.M.O., Muséum National d'Histoire Naturelle, to Libya from 25th March to 15th May, 1966. The main object was to collect data on the spring migration especially in Fezzan, the results of which will be published elsewhere (Erard and Larigauderie in prep.) The expedition entered Libya from Tunisia, followed the coast to Misurata, reached Bu Gren, thence to Sebha via the Fezzan road. In Fezzan we visited Ajial, south-west to the Tin Abunda area, Chati west to Berguen, thence south to Murzuk, Traghen and Umm-el-Araneb. The same way was followed to return from Sebha to Tunisia.

We wish to thank Mr. C. W. Benson, who has been kind enough to assist in the drafting of the entire text in English.

Falco biarmicus Lanner Falcon

We have nothing to add to knowledge of the range of this falcon, which is well distributed in Tripolitania and Fezzan. It is worth mentioning some hunting behaviour recorded at El Hamman near Socna. On 1st April a pair, which regularly frequented the oasis, attacked in concert a male Pallid Harrier *Circus macrourus* which was hunting near some tamarisks. While one of the falcons (from its size probably the female) chased it at the same level, the other swooped down on it almost vertically. The harrier managed to escape by flying close to the ground among the tamarisks. It might be thought that the falcons were trying to catch the harrier, but the following observations suggest an alternative explanation. About one hour after the incident just described, one of the falcons was seen harrying a Brown-necked Raven *Corvus ruficollis* which was carrying a Yellow Wagtail *Motacilla flava* in its claws. It followed every twist and turn of the raven in its endeavour to escape until the raven dropped the wagtail, which was grabbed in the air by the falcon, who flew off with it. The raven followed the falcon in an endeavour to reclaim the prey. It was joined by several other ravens until eventually the falcon dropped the prey, which was immediately regained in the air by the raven. But as soon as its "companions" had disappeared, the raven was again chased in flight by the falcon, and obliged to drop the wagtail to the ground, where it was regained by the falcon, who then disappeared with it.

Falco peregrinus Peregrine Falcon
Falco pelegrinoides Barbary Falcon

The true status of these two species in Libya is not known. There are no breeding records from Tripolitania and Fezzan. *F. pelegrinoides* has been collected in northern Tripolitania at Sabratha in March and Bu Gheilan in November (Cavazza 1932), and in Fezzan several times in the Ghat area in October and March, and at Serdeles on 2nd April (Moltoni 1934, 1938). There are visual records of one species or the other from Fezzan at Sebha, Murzuk, Traghen and Brak in autumn (between 17th September and 13th October: Snow, in Guichard 1955), and 100 miles south of Gatrun in September (Tuck 1959). All of the foregoing records may concern migrants, but *F. pelegrinoides* may breed in the Ghat and Serdeles areas.

At Ubari, 150 miles east-north-east of Serdeles, on the evening of 20th April a falcon was seen which was identified as an *F. pelegrinoides*. It was lighter and smaller than *F. peregrinus*, and showed clearly a rufous patch on the nape. It was hunting by some palm-groves, and disappeared along the line of cliffs forming the southern border of the Edeyin Ubari. On 26th April and again on 3rd May a probable *pelegrinoides* was seen at the small lake of El Jedid near Sebha. The foregoing records may be useful for the guidance of future workers.

Gallinula chloropus Moorhen

We confirm the breeding of the Moorhen at the lake of El Jedid near Sebha (see Guichard, and also Tuck who saw chicks on 27th June). We think that Guichard was right when he estimated the population at *ca* 50 pairs but an accurate census is almost impossible by visual recording because the vegetation (reeds and tamarisks) is so dense in this place. Egg-shells (recent hatchings) were noted on 25th April.

Cursorius cursor Cream-coloured Courser

Along the Fezzan road on 23rd March this species was noted in subdesertic habitats from south of Misurata to about 50 miles south of Bu N'gem. There were plenty between Misurata and Ghedaia, flocks of up to 20 being recorded on several occasions. Further south, only isolated pairs were noted. They were apparently on their breeding grounds but were not yet nesting. On 31st March three were seen at El Hamman, and on 1st April there was a single bird in an area covered with low shrubs of *Chenopodiacea* at the entrance to the Chati Valley, 70 miles north of Sebha. Along the Fezzan road on 12th May we had the same experience as on 23rd March, but did not see any birds where they had been seen on 31st March and 1st April. Nevertheless on the Fezzan road the birds were then scattered in pairs and attending chicks. One brood of two less than one week old was discovered.

Sterna albifrons Little Tern

In support of the breeding observations of Bundy and Morgan, two pairs were seen on the coast between zuara and the Tunisian boundary on 15th May. From their demonstrative behaviour, it was obvious that the birds were breeding, but we did not have the time to search for nests. Our conviction that they were breeding was reinforced later the same day, when birds were seen displaying in the same manner near Bahiret-el-Biban in Tunisia, and several clutches of eggs were found.

Pterocles alchata Pin-tailed Sandgrouse

Three males of this species were identified on 11th May at a pool at El Hamman, among some 200 *P. senegallus* and 100 *P. coronatus*. The latter two species were already present in the oasis when it was visited on 30th March/1st April, but no *alchata* were then seen. El Hamman is at 29° 01′ N, 15° 45′ E, and is well south of the range as defined by Guichard, who gives Gheria Esc Schergia (30° 23′ N, 13° 32′ E), as the southernmost locality. The extension might be correlated with unusually heavy rain in April 1966.

Tyto alba Barn Owl

Guichard does not record it from Fezzan. A fresh secondary feather was found on 4th April in the palm-grove at Sebha.

Hirundo obsoleta Pale Crag Martin

Guichard writes of it as occuring sparingly in Fezzan, and gives as localities Brak, Murzuk and Sebha: see also Moltoni (1934), Toschi (1947) and Tuck (1959). We recorded it around the forts of Sebha and Murzuk though not at Brak. It appeared to be well distributed in the oasis of the Uaddi Ajial Valley from Labiod to Ubari (i.e. half a dozen pairs each at Labiod, Bendbeya, Gragra, Touiva, Brek, Greifa and Ubari), and brooding birds were noted on 19th April in covered wells and in the vaults excavated in the tops of artesian wells.

Lanius excubitor Great Grey Shrike

According to Guichard the species is uncommon in Fezzan, and the only autumn records are Snow's from Sebha and Traghen, but he overlooked the records of Moltoni (1938) from the Ghat area and Murzuk. Bundy and Morgan did not find it breeding south of 30° N, though Tuck saw it at Sebha in June. It is of course well distributed as a breeder in northern Tripolitania. Thus on 28th March a pair was feeding a chick just out of the nest between Tagiura and Gasr-el-Garabulli (estimated egg-laying on 20th February), and a pair had a fresh nest, not yet laid in, on 29th March half-way between Misurata and Bu-Gren (there was a larder in an Acacia tree, at which one *Oenanthe oenanthe* and two *Calandrella brachydactyla* were identified). Further south, at El Hamman near Socna on 1st April, an adult was brooding on a nest. At Sebha four pairs were located, two of which were attended respectively by two and three full grown young still under parental care (estimated egg-laying on 20th February in both cases). A few birds, including several fledged young, were seen in the palm-grove at Ubari and in *Acacia raddiana* woodland in the Tin Abunda area between 21st and 23rd April. None were seen at Murzuk and Traghen, but they may have been present in such small numbers that they were overlooked.

At Sebha, in territories of these shrikes, dates were noticed impaled on the terminal spikes of the lower fronds of palms, as reported by Johnson (in Beven and England 1969) and Simmons (1969). Hoarding had probably taken place at the end of the previous year when the dates were ripe. We never saw the birds eat any of these dates. They fed mostly on insects, particularly mole-crickets *Gryllotalpa* around the lake.

Hippolais pallida Olivaceous Warbler

Breeding in Fezzan has not been proven. Guichard mentions birds in song at the lake at Sebha on 27th February, but they might possibly have been winterers. On 28th April we collected a male with slightly enlarged testes in tamarisks by the lake of El Jedid. It was the only example of this species seen there, and proved to be *H. p. opaca*. Like one seen on 23rd April in Thala woodland near Tin Abunda, it might have been on passage. Nevertheless a territorially behaving pair was located in a private garden well provided with tamarisk hedges as soon as we arrived at Sebha on 3rd April, and was regularly noted until our departure from there on 10th May. Unfortunately we could not obtain permission to search the garden for a nest. A singing bird was also noted on 11th May at El Hamman near Socna in tamarisk scrub.

Sylvia melanocephala Sardinian Warbler

Bundy and Morgan suspected breeding in introduced Acacia scrub near Tripoli in 1966. We saw a pair, the male of which was singing, on 13th May in a similar habitat about 10 miles from Tripoli on the road to Azizia. Breeding on the Tripolitanian coast had already been suspected by Cavazza.

Sylvia cantillans Subalpine Warbler

It has never been recorded as breeding in Fezzan, but as quoted above for *H. pallida*, as soon as we arrived in Sebha a pair was located holding a territory. Fortunately it overlapped a garden to which we had access. The male was ringed, so that it was proved that this pair was present until our departure on 10th May, though no nest was found.

Sylvia nana Desert Warbler

It has already been recorded from Fezzan in the Ghat area, at Uaddi Tanezzuft and Bir Tahala (Moltoni 1934, 1938). Whitaker (1902) recorded it on 10th July at Oumsinerma, a locality not on our maps. Two were seen on 21st April near Tin Abunda, between the Thala woodland and the Edeyin, in an area covered with scattered clumps of herbaceous and woody vegetation invaded by sand.

Scotocerca inquieta Scrub Warbler

Bundy and Morgan are sceptical about the distribution of this species in Tripolitania where it was already mentioned by Whitaker and by Cavazza. It haunts biotopes which look very similar to those of *Sylvia conspicillata* and, as Heim de Balsac and Mayaud (1962) properly write, it is a steppe or attenuated desert bird. We recorded it in fact on a *Chenopodiacea* steppe respectively 18 and 35 miles from Bu-Gren on the road to Misurata on 12th May. On the first occasion, a pair was located in an area covered with scattered and rather low (20–30 cm) herbaceous clumps; on the second occasion, the species was noted twice in a much denser and higher (up to 1 m) growth of *Limoniastrum*, *Frankenia*, *Atriplex*, *Sueda*, *Halocnemum* and *Salicornia*.

Oenanthe lugens Mourning Chat

According to Guichard, it occurs in Tripolitania south of the Jebel to about 30° N. The few records from Fezzan (a region in which breeding has never been proved) most probably concern only vagrant birds (or a north to south movement outside the breeding season). In western Tripolitania, it has been recorded up to 32° N, but in eastern Tripolitania on our way from Misurata to Sebha, we found it on 28th–29th March and 11th–12th May well distributed between 10 miles south of Bu-Gren (31° N) to Socna (29° N). On 28th March, we saw a male established in a rocky glen in the hills 10 miles west of Homs, and possibly it breeds in this locality.

Rhodopechys githaginea Trumpeter Finch

It had previously been recorded in Fezzan only from Serdeles (Moltoni 1934) and Ghadames (Guichard). During our stay in Ubari from 19th to 24th April, we regularly saw a dozen birds (as many males as females) which often came to drink at a well and looked for seeds on heaps of cereal-sheaves in the company of Desert Sparrows. The finches circulated between the oasis and the nearby rocky steppe where we located a few of them but failed to discover any nest although, according to their behaviour, the birds were most probably feeding their broods.

Passer hispaniolensis Spanish Sparrow

Contrary to Guichard's opinion and to Bundy and Morgan's implicit statement we do not think that it breeds in Fezzan or even nests in southern Tripolitania. We did not find it breeding south of 20 miles south of Misurata. It is well established, and proved by ringing (Bachkiroff 1953 and C.R.M.M.O.), that in North Africa, outside the breeding season, this sparrow has considerable movements and penetrates into the desert. Thus at El Hamman we saw small flocks on 31st March/1st April but none on 10th/11th May. At Ubari we recorded only a single exhausted female on 20th April, and at Sebha the last birds disappeared on 18th April except for a single female still present on 6th May.

Passer simplex Desert Sparrow

It breeds in all the oases of Fezzan, where it is common, sometimes very abundant (e.g. in Murzuk). Further north, it was recorded at El Hamman (feeding full grown chicks on 11th May), Socna, Hon and Uaddan, but not at Bu N'gem, where Guichard saw a pair on 6th November.

References:

Bachkiroff, Y. 1953. Le Moineau steppique au Maroc. *Travaux originaux. Service de la Defense des Vegetaux (Rabat)* No. 3: 1–135.

Beven, G. and England, M. D. 1969. The impaling of prey by Shrikes. *Brit. Birds*. 62: 192–199.

Bundy, G. and Morgan, J. H. 1969. Notes on Tripolitanian Birds. *Bull. Br. Orn. Cl.* 89: 139–144, 151–159.

Cavazza, F. 1932. Osservazioni sugli uccelli della Tripolitania. *Riv. Ital. Orn.* I: 155–209.

Guichard, K. M. 1955. The birds of Fezzan and Tibesti. *Ibis*, 97: 393–424.

Heim de Balsac, H. and Mayaud, N. 1962. *Les Oiseaux du Nord-Ouest de l'Afrique*. Paris.

Moltoni, E. 1934. Uccelli riportati dal Prof. Guiseppe Scortecci dal Fezzan. *Atti della Soc. Sc. Nat. Milano*. 73: 343–382.

— 1938. Uccelli del Fezzan sud occidentale e dei Tassili d'Agger. *Atti della Soc. Sc. Nat. Milano*. 77: 199–250.

Simmons, K. E. L. 1969. Feeding behaviour of Great Grey Shrike in North Africa. *Brit. Birds*. 62: 203–204.

Toschi, A. 1947. Risultati di una escursione zoologica in Libia. *Riv. Ital. Orn.* 17: 1–24.

Tuck, R. F. 1959. Summer observations on the birds of the Fezzan and Tibesti. *Ibis*, 101: 251–252.

Whitaker, J. I. S. 1902. On a small collection of birds from Tripoli. *Ibis*, 8(2): 643–656.

The Philippine races of the Rufous-capped Grass Warbler *Megalurus timoriensis*

by Kenneth C. Parkes

Received 3rd April, 1970

For many years all of the Philippine populations of the highly polytypic sylviid species *Megalurus timoriensis* were assigned to a single subspecies, *M. t. tweeddalei* McGregor (new name for *M. ruficeps* Tweeddale, preoccupied, type locality "Monte Alban"=Montalban, Rizal Province, Luzon). Salomonsen (1953) was the first to demonstrate that this species varies within the Philippine archipelago, and he named two new subspecies: *M. t. crex* (Kaatoan Cinchona Plantation, Mt. Katanglad [1250 m. altitude], Bukidnon Prov., Central Mindanao), and *M. t. mindorensis* (Mt. Halcon [8000 ft. altitude], Mindoro), the latter based on a single specimen. New material permitted Ripley and Rabor (1958) to review Salomonsen's work. The two additional races were upheld, but several of the diagnostic characters employed by Salomonsen were shown to be invalid.

Subspecific assignments of populations from islands other than those of the type localities (=Luzon, Mindanao, Mindoro) have varied. Salomonsen stated: "The birds inhabiting Panay, Negros and the other Visayan islands are more or less intermediate between *tweeddalei* and *crex*, although they definitely come nearest to *tweeddalei*". Ripley and Rabor (1956) listed Negros birds as *tweeddalei* without comment. Later (1958) they stated that birds from Negros "are intermediate between *tweeddalei* and *mindorensis* in some characters and *mindorensis* and *crex* in others". After a discussion of characters, they tentatively assign the Negros population to *crex*, the Mindanao race. The next authors to discuss this species were Rand and Rabor (1960). They stated that a pair of birds from Bohol were intermediate between *tweeddalei* and *crex*, but closer to the latter, and their account is headed with the name *Megalurus timoriensis crex*. Meyer de Schauensee and du Pont (1962) also listed their one Bohol specimen as *crex*, quoting Rand and Rabor on supposed intermediacy with *tweeddalei*. The treatment of Samar birds in Rand and Rabor's 1960 paper is similar to that cited above for Bohol.

Salomonsen (1953) emphasized the importance of using freshly moulted specimens when making comparisons between samples of grassland sylviids such as *Megalurus*. Not only are wing and tail measurements relatively meaningless in worn birds, but all of the colours become bleached and colder in tone. Salomonsen did *not* mention museum age, but this species appears be especially prone to post-mortem "foxing". Cold greyish browns become more reddish brown with age. Several of the colour characters ascribed to *crex* by Salomonsen appear to have been based upon comparison of his mostly newly-collected Mindanao series with older birds from other islands. In particular, the supposed differences in the colour of the underparts among *tweeddalei*, *crex* and *mindorensis* can be discounted, as illustrated by comparisons among birds of similar museum age, and comparisons of older and newer series from Luzon.

Material from the island of Leyte has not been available to previous workers. Examination of two specimens from that island has helped to clarify the geographic variation in this species in the Philippines. There appears to be a center of differentiation on Leyte; here certain characters manifest their greatest development that also appear to varying degrees on surrounding islands. The variation can best be described through the naming of an additional subspecies, as follows:—

Megalurus timoriensis alopex, subsp. nov.

Type: Carnegie Museum no. 138387, adult male in fresh plumage, collected at the Tacloban airstrip, Leyte Island, Philippines, 27th November, 1945, by T. H. Holder (collector's no. 87).

Characters: By far the reddest of the Philippines race of the species, resembling to some extent very badly foxed specimens of other races. Among the specimens examined, the type is most similar to an old (1895) and badly foxed specimen of *mindorensis*, but differs in brighter rufous flanks, pale rufous wash across breast (contrasting with the white throat), and darker, less distinct superciliary line. The superciliary line of *alopex* is less distinct than those of either *tweeddalei* or *mindorensis* (see fig. 1), being about as in *crex* but buffier, less grey. The marked rufescence on all parts of the bird serves to separate *alopex* from freshly moulted, recently collected specimens of any other Philippine race. As for measurements, *alopex* is intermediate in tail length between the large *tweeddalei* and the small *crex*; the wing is as long as that of *tweeddalei*; the bill of the type of *alopex* is slightly shorter than that of any adult of *crex* measured either by me or by Salomonsen. In addition, the bill of *alopex* appears to be somewhat stout for its length (see fig. 1).

Measurements of Type: Wing (flattened) 76.5 mm.; tail 116 mm.; bill from skull 16 mm. Salomonsen (1953) gives measurements for Luzon male *tweeddalei* as wing 75–78 (1 Carnegie Museum specimen has wing 80), tail 126–142, and bill 18–20; for Mindanao *crex* wing 68–71, tail "at most 110", bill 16.8–17.

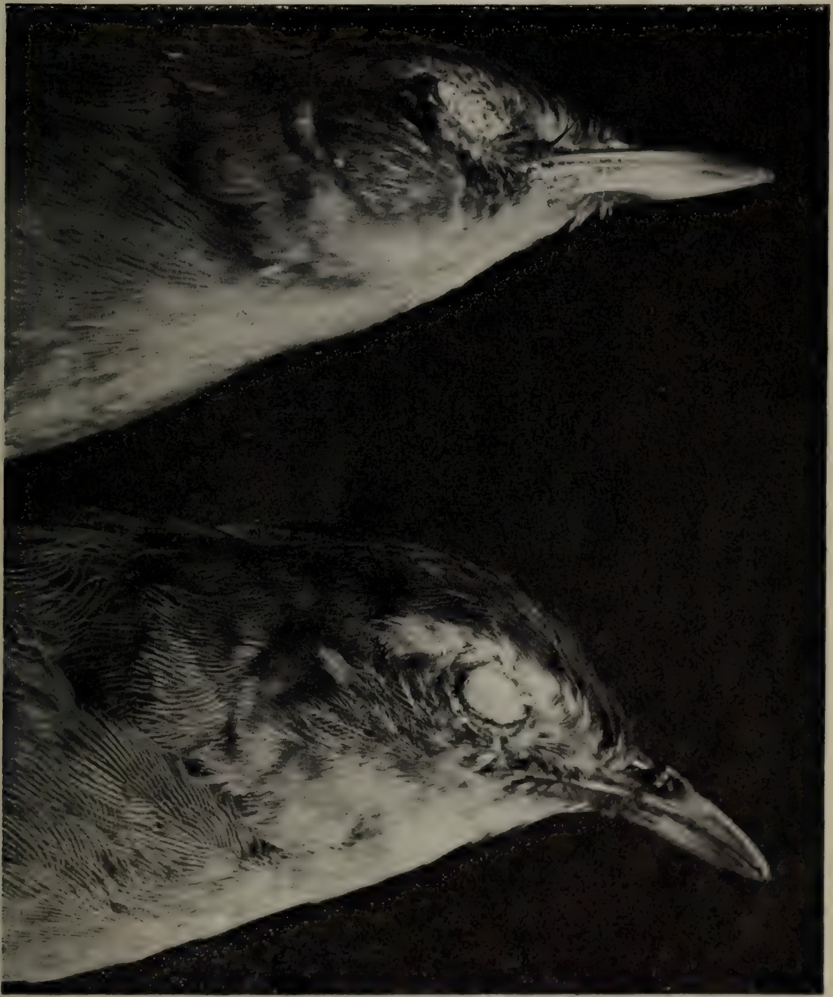


Fig. 1 *Upper*: *Megalurus timoriensis alopex*, type specimen.
Lower: *M. t. tweeddalei*, Carnegie Mus, no. 137198, Clark Air Force Base, Pampanga Prov., Luzon.

Range: Centered on Leyte, with birds from Bohol and Cebu, to the west, nearest this subspecies. Birds from Negros, even farther west, are quite variably intermediate between *alopex* and *tweeddalei*. Birds from Samar, to the north and east of Leyte, are also variably intermediate between *alopex* and *tweeddalei*, but in some respects, especially the colder tones of the flank colour are nearest *tweeddalei*. Birds from the islands between Negros and Luzon (specimens examined from Panay, Marinduque, Tablas, and Ticao) appear to be slightly smaller than those from Luzon, but are best called *tweeddalei*. The subspecies *mindorensis* appears to be confined to Mindoro.

The principal colour characters of the four subspecies, as exemplified by unworn specimens from localities away from zones of intergradation, may be summarized as follows:—

tweeddalei: crown palest rufous; superciliary line well developed, white; colours of flanks, tail, etc. coldest in tone.

mindorensis: crown richer rufous; general colour darker and richer; superciliary line close to *tweeddalei.*

alopex: crown also richer rufous than in *tweeddalei*, but not as dark as in fresh *mindorensis;* general colour bright rufescent; superciliary line indistinct, buffy.

crex: crown dark, usually (not always) obscurely streaked with blackish; tail blackest brown of all races; flanks browner, less cold grey than in *tweeddalei* (*contra* Salomonsen); superciliary line indistinct as in *alopex*, but greyer.

Remarks: Most descriptions of the habitat of *Megalurus timoriensis* in its non-Philippine range stress its fondness for dense grasslands, both wet and dry, at virtually all altitudes; see, for example, Rand and Gilliard (1968: 352–353). Delacour and Mayr (1946: 195–196) correctly described *timoriensis* in the Philippines as somewhat more of a thicket and less of a grassland bird, although they erred in stating that it is rarely found below 3000 feet elevation. It is significant that *only* in the Philippines is *timoriensis* sympatric with a larger congener, *Megalurus palustris* (which is aptly called "Giant Warbler" by my Filipino colleagues). Each of the two species has a wide range, with *palustris* found exclusively west of, and *timoriensis* east of the traditional "Wallace's Line" separating the Indo-Malaysian and Australo-Papuan faunas —*except* in the Philippines, where both species are found virtually throughout the archipelago. Here *palustris* is, in general, the grassland bird. The respective habits and habitats of the two species in Luzon are well described by Amadon and Jewett (1946). My experience on that island paralled theirs; once I had learned its loud, distinctive "*quilp!*" call-note, I found *timoriensis* to be quite common in the lowland and foothill areas where my fieldwork was conducted, its skulking habits contrasting with the conspicuousness of *palustris*. The habitats of the two species overlapped here to some extent; I found *timoriensis* most often where shrubby second-growth woods bordered on fields of tall grass or pastures, but it did also venture out into dense grass-clumps like those described as its typical habitat outside the Philippines. Ripley and Rabor (1958) give a description of the habitat of *M. t. mindorensis* that matches well my observations of *M. t. tweeddalei*. It is apparent that a detailed study of the relationships between the two species of *Megalurus* in the Philippines may well indicate the presence of a form of "competitive exclusion", with the large *palustris* dominating the habitat normally occupied by the smaller *timoriensis*.

Etymology: The name of the new subspecies, *alopex*, is taken from the Greek word for "fox", in reference to the rufescent coloration that mimics "foxed" specimens of other races.

ACKNOWLEDGMENTS

Most of the comparisons were made at the American Museum of Natural History in 1962, through a travel grant from the Frank M. Chapman Memorial Fund. Certain specimens were also borrowed from the Field Museum of Natural History, Peabody Museum of Natural History (Yale University), and the U.S. National Museum. I am grateful to the authorities of these institutions for their assistance. My field work in Luzon in 1956 was part of a project of the Graduate School of Public Health, University of Pittsburgh, under the sponsorship of the Commission on Viral Infections, Armed Forces Epidemiological Board, supported in part by the Office of the Surgeon

General, U.S. Department of the Army. I am indebted to Dr. Canuto G. Manuel and Mr. Telesforo Oane for help in the field. The type specimen of *alopex* is from a small collection of Leyte birds exchanged to Carnegie Museum, with the consent of the collector, from the University of Arkansas through the kindness of Dr. Douglas James.

References:
Amadon, D. and Jewett, S. G., Jr. 1946. Notes on Philippine birds. *Auk*, 63: 541–559.
Delacour, J. and Mayr, E. 1946. *Birds of the Philippines*. New York: Macmillan.
Meyer de Schauensee, R. and du Pont, J. E. 1962. Birds from the Philippine Islands. *Proc. Acad. Nat. Sci. Philadelphia*, 114: 149–173.
Rand, A. L. and Gilliard, E. T. 1968. *Handbook of New Guinea Birds*. Garden City, New York: Natural History Press.
Rand, A. L. and Rabor, D. S. 1960. Birds of the Philippine Islands: Siquijor, Mount Malindang, Bohol and Samar. *Fieldiana: Zoology*. 35: 221–441.
Ripley, S. D. and Rabor, D. S. 1956. Birds from Canloan Volcano in the highlands of Negros Island in the Philippines. *Condor*, 58: 283–291.
— 1958. Notes on a collection of birds from Mindoro Island, Philippines. *Peabody Mus. Nat. Hist., Yale Univ., Bull.* 13: 83 pp.
Salomonsen, F. 1953. Miscellaneous notes on Philippine birds. *Vidensk. Medd. fra Dansk naturh. Foren.*, 115: 205-281.

A northern race of lark supposedly breeding in Mexico

by Allan R. Phillips

Received 11th March, 1970

As is well known, only one species of lark, the Horned or Shore Lark (*Eremophila alpestris*) occurs in the Americas, where it is represented by many local races in North America, south to the Isthmus of Tehuantepec in southern México, and an isolated one in Colombia. Certain striking parallisms occur, but no widely separated populations are now generally considered identical. Thus, as Dickerman (1963: 331) has intimated, one of the unlikely reports in Miller *et al.* (1957) is that of the breeding of *E. a. enthymia* (Oberholser) in Coahuila, at least 1100 km. (700 miles) south of its main breeding range as given by Hellmayr (1935) and the American Ornithologists' Union (1957). Earlier writers (Ridgway, 1907) considered it to breed in Canada only, much farther away. This Coahuila record was based by Miller (*op. cit.:* 105) on a series of specimens in the Moore Laboratory of Zoology at Occidental College, taken at various seasons at "4 mi. S. Hipolito", i.e. "Lake Tulio" (=Tulillo), Coahuila, by Chester C. Lamb. No other race was taken there, so this is clearly the resident population.

Through the courtesy of Dr. J. W. Hardy, I was able to study the larks of the Moore Laboratory in 1969 and to compare them to selected Mexican specimens from my collection. It was at once evident that this Coahuila series was indeed very different from any other Mexican specimens I had ever seen. It was however almost equally different from my recollection of *enthymia*. Through the courtesy of Drs. Hardy and S. M. Russell I was able to compare four males and two females of this series to known *enthymia* in the University of Arizona, so as to verify this impression. The Coahuila birds may be known as:—

Eremophila alpestris lactea, *subsp. nov.*

Type: Moore Laboratory of Zoology 40604, male, Lake "Tulio" (=Tulillo), 5 km. south of Hipolito = 53 km. west-north-west of Saltillo, Coahuila, 25° 38′ N., 101° 27′ W., 2nd November, 1944. Collected by C. C. Lamb (original no. 11317).

Measurements of type: Wing chord 100.5; tail 69.4 mm.

Distribution: Known only from the type locality.

Description: The palest, in all known plumages (no juveniles seen), of all the North American races dorsally, tending to an almost whitish buff dorsum, less grey or reddish brown than in the other races. Differs further from *enthymia*, *sensu strictu*, of Saskatchewan and possibly south to north-western Texas, in its yellow throat, and usually yellow forehead; in these respects closer to *utahensis* (Behle) of northern Utah, but this race is hardly if at all separable otherwise from *enthymia*, being decidedly darker and greyer above than *lactea*. These differences are especially pronounced on the back of the male and the crown of the female, but even the wings of the male are preceptibly paler and are (in fresh plumage) further distinguished by relatively broad and distinct whitish tips ($\frac{1}{2}$ to $1\frac{1}{2}$ mm.) on the inner primaries (4 to 6, counting from the outside).

Remarks: Though these larks were marked "*enthymia* AHM" by Miller, there is an unsigned note (possibly his?) in the tray: "this series averages smaller than true *enthymia* by quite a bit". But the colour differences are far more striking, particularly in the males. These are near Tilleul Buff dorsally, or a pale Vinaceous Buff (Ridgway, 1912), in fresh plumage (early November), with the centres of the feathers nearest Light Drab but paler and browner (females are similar but have the feathers streaked centrally with a colour near Drab when worn). The nape of males is near Avellaneous when worn. Males have the lesser wing-coverts deep Shell Pink to nearly Buff-Pink.

From their extreme pallor, it is clear why one unfamiliar with the range of variation in the northern races would key these birds out to *enthymia* in Ridgway's key (1907: 298–303). But it is puzzling that such a surprising determination should have been published without an actual critical comparison of specimens, which would surely have shown that the Coahuila larks are not true *enthymia*.

Another notable point is the extremely local nature of this variation. Through the kindness of the authorities of the United States National Museum, I had previously been able to confirm the identity of a series of *diaphora* (Oberholser) from Saltillo, 7th–8th May, 1902. These average slightly duller than the type series from Miquihuana, Tamaulipas, on nape, wing, etc.; but one or two males are just as pinkish and deep. Thus, though found such a short distance away, they are much darker above, and in May much redder-backed, than *lactea*. I see no sign of adventitious (extraneous) bleaching in the latter; fall birds are just as whitish as June ones, and the yellow and pink colours show no dulling (seasonally or as compared to other races). A local ecological study should prove interesting.

It is not improbable that several other local races, less striking than *lactea*, remain to be described from México. The available material is unsatisfactory as this species requires *series* taken from many local populations in fall, winter, and early spring; much of what little material does exist is badly worn. There seems to be wide variation of many kinds . . . sexual, individual, seasonal . . . and possibly also *post-mortem* fading ("foxing"). But at least it may now be affirmed that *E. a. enthymia* does not breed in México.

References:

American Ornithologists' Union. 1957. *Check-list of North American Birds.* 5th Ed.

Dickerman, R. W. 1963. A Critique of "Birds from Coahuila, México". *Condor* 65: 330–332.

Hellmayr, C. E. 1935. Catalogue of Birds of the Americas. Part VIII. *Field Mus. Nat. Hist., Zo. Ser.*, 13(8)

Miller, A. H., Friedmann, H., Griscom, L., and Moore, R. T. 1957. Distribution Check-list of the Birds of México. Part II. *Pac. Coast Avif.* 33.

Ridgway, R. 1907. The Birds of North and Middle America. Part IV. *U.S. Nat. Mus. Bull.*, 50, pt. 4.

— 1912. *Color Standards and Color Nomenclature.* Washington, D.C.: privately published.

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be listed at the end of a contribution, in the same format as in the notice to contributors to the *Ibis* (see any 1969 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

Contributors are entitled to a maximum of ten free copies of the number of the *Bulletin* in which their contribution appears, provided that it exceeds one page of the *Bulletin*. Extra copies at cost price can be ordered through the Editor at the time of submission of the manuscript.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s.* for years up to 1968 (Vol. 88) and 7*s.* 6*d.* for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s.* (payable in advance) or per copy 7*s.* 6*d.*, payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

Bulletin of the

British Ornithologists' Club

Edited by

C. W. BENSON

Volume 90 No. 5 October 1970

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, Bt., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

P. F. R. Jackson

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1970 and 1971

17th November. Speaker: Mr. Murray Williams. Subject: New Zealand Wildfowl Research and Conservation. Venue: The Criterion in Piccadilly, W.1.

19th January 1971. Speaker: Dr. D. W. Snow. Subject: To be decided. Venue: The Criterion in Piccadilly, W.1.

16th March. Speaker: To be decided. Venue: The Criterion in Piccadilly, W.1.

18th May. Speaker: Dr. C. H. Fry. Subject: African Ornithology by Hovercraft. Venue: The Criterion in Piccadilly, W.1.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 90 No. 5 Published: 20th October, 1970

The six hundred and sixty-sixth meeting of the Club was held at the Criterion in Piccadilly, London, W.1 on Tuesday, 15th September, 1970, at 7 p.m.

Chairman: Dr. J. F. Monk; present: 19 members and 10 guests.

Mr. John Hopcroft showed the Club a selection of his photographic slides of birds at Lake Nakuru and neighbouring lakes in Kenya, and spoke briefly about the creation of a reserve on the shores of Lake Nakuru devoted principally to the conservation of water birds.

Professor Emil K. Urban then spoke to the Club about the bird colonies breeding on islands in Lake Shala, Ethiopia, describing each colony and illustrating his address with coloured slides.

The Red-chested Flufftail *Sarothrura rufa* in the Central African Republic

by F. Roux and C. W. Benson

Received 2nd April, 1970

Keith *et al.* (1970) give no record of *Sarothrura rufa* (Vieillot) from the Central African Republic. The Museum National d'Histoire Naturelle, Paris, has received two females of this species, both apparently fully adult, from Bangui, at 4° 23′N., 18° 35′E. The first was collected by Monsieur R. Pujol on 10th November, 1968; the second by Mlle. Ch. Choux on 28th August, 1969. Their respective measurements (in millimetres) are:

Wing	74	75
Culmen (from base of skull)	12	13
Tarsus	21	22.5
Middle toe with claw	29	29.5

Keith *et al.* regard the subspecies in Gabon, Cameroun and Nigeria as *S. r. bonapartii* (Bonaparte), the wing-length of which they give as 66–73, as against 74–82 mm. in specimens of nominate *rufa* from South Africa (measurements do not indicate any sexual difference at all). They recognise *S. r. elisabethae* van Someren as the subspecies in the north-eastern Congo, Uganda and extreme western Kenya, but only on the average difference that in females the mantle is usually transversely barred with white, whereas in nominate *rufa*, ranging from central Kenya, the southern Congo and Angola southward, it is usually spotted with white, and in *bonapartii* usually streaked so. Actually the two Bangui females have the mantle spotted, agreeing well in this respect with seven females from Malawi, and three females from South Africa, in the British Museum (Natural History). Nevertheless on geographical grounds they must be placed with *elisabethae*. Their relatively long wing-measurements (74, 75 mm.) indicate that they are better placed wih that subspecies than with *bonapartii*. Keith *et al.* give the wing-lengths of over 200 specimens of *elisabethae* from the north-eastern Congo (mostly from Butembo, 0° 08′ N., 29° 17′ E.) as 70–81 (average ca. 76) mm.

Reference:

Keith, G. S., Benson, C. W. and Irwin M. P. Stuart. 1970. The genus *Sarothrura* (class Aves, family Rallidae). *Bull. Amer. Mus. Nat. Hist.* 143(1).

Species with Malaysian affinities in the Sundarbans, East Pakistan

by Raymond A. Paynter, Jnr.

Received 24th July, 1970

In April, 1958, two weeks were spent by the Harvard-Yale Expedition collecting in the tidal forests of the Sundarbans at Burigoalni, about 30 miles south of Khulna, East Pakistan. No general report on the 475 specimens collected is planned. However, four species which were breeding deserve comment because of their apparent disjunct distribution and Malaysian affinities.

On 12th April a specimen of *Picus vittatus* was collected. This, the only one of the species seen, was a female with an enlarged ovary. The species, now considered conspecific with *viridanus* (Deignan, 1955, *Ibis* 97: 18–24), was not known heretofore from west of Burma.

The specimen has an unstriated upper breast, throat, and chin, which distinguishes it from *P. vittatus viridanus*, the race that occurs over much of southeastern and central Burma and to which this bird might be expected to be referable. Instead, in size, pattern, and color it more closely resembles *eisenhoferi*, which ranges from western Burma through northern and eastern Thailand to Laos and southern Annam. However, its central rectrices are more heavily marked with white and its back is less golden than in *eisenhoferi* or in the other southeast Asia races. The throat and upper breast are more ochraceous than yellow and the green on the abdomen and lower breast is dark, thus resembling smaller *P. v. connectens* of southwestern Thailand which, contrary to Deignan, I believe is a darker subspecies than *eisenhoferi*. The white centers to the feathers of the abdomen and lower breast are narrower than in any known race.

It seems very likely that the population of the Sundarbans is geographically isolated and may be morphologically quite distinct from the presently recognized races, but more specimens are required to be certain.

Pitta moluccensis was a conspicuous element of the avifauna during our visit, although heretofore the species was known west of Arakan, Burma only from a single specimen collected in the Sundarbans at nearby Barisal, Bakerganj District, on 19th March, 1925. It was thought by Whistler (1934, *Journ. Bombay Nat. Hist. Soc.* 37: 222) to have been a migrant.

The species was seen often at a distance in the treetops, singing loudly. It was wary, however, and when approached dropped to the ground and became silent. A male and female were collected, both of which had very enlarged gonads.

These specimens are referable to *P. m. megarhyncha*, the race which breeds from Sumatra and nearby islands north, in the mangrove belt, along the west coast of the Malay peninsula and southwestern Thailand to Arakan.

Pachycephala cinerea cinerea, a widespread Malaysian bird, was in full song and relatively common at Burigoalni. The gonads were very enlarged in a series of four males and one female.

The species had not been known with certainty from west of Burma. However, on the assumption that unidentifiable *Tephrodornis grisola* Blyth, 1843 and *P. c. cinerea* Blyth, 1847 were the same bird, it was thought to range to near Calcutta. Ripley (1961, *Synopsis Birds India Pakistan*, p. 440) included the Sundarbans in the distribution on the basis of these specimens from Burigoalni.

Dicaeum trigonostigma rubropygium was found fairly frequently in sunny open spots within the tidal forest. A series of four specimens was in breeding condition. The bird is primarily a Malaysian and Phillipine species. It occurs sparingly in Burma and was collected many years ago in a limited area in eastern Assam (Lakhimpur, Dibrugarh District).

Nesting of the Shoebill *Balaeniceps rex* Gould in the Bangweulu swamps

by R. A. Critchley and J. J. R. Grimsdell

Received 14th May, 1970

On 5th May 1970 we took part in a low-level (300 feet) aerial survey over the Bangweulu swamps and flood plains, north-eastern Zambia. The aircraft was piloted by Jack Uys, and P. Macartney was also a passenger. Twenty Shoebills were counted along the Lulimala River between Chiundaponde (12° 15′ S., 30° 35′ E.) and the Lulimala Game Camp (12° 12′ S., 30° 07′ E.). Three nests were also seen, with parents in attendance. Two of the nests contained two eggs; the other contained one egg. Another nesting pair was seen near the Kaleya Game Camp on the Lukulu River (11° 55′ S., 30° 15′ E.); the nest contained two eggs. In subsequent flights later the same month a further two nests, with birds sitting on them, were seen in the Lulimala River area, making a total of six nests seen in the whole survey.

The nests were about four feet in diameter, amongst riverine papyrus. They were easy to see from the air, as they seemed to be on islets surrounded by swamp. The surrounding vegetation had been trampled down, so that there appeared to be a round bare patch of earth, with the nest apparently constructed of ambatch in the centre.

No nests were seen during aerial surveys in the previous six months (October to April), and none were seen in the extensive, permanent swamp bordering on Lake Bangweulu itself. The habitat favoured by the Shoebill also seems to be preferred by the Sitatunga Antelope *Tragelaphus spekei* Sclater.

The only previous breeding record from the Bangweulu area is that by T. C. Fooks and others. Fooks photographed a young bird at its nest on 8th October 1961. It was considered to be some six or seven weeks old, from an egg laid perhaps in late July (Benson 1961). Thus the eggs which we saw were laid some three months earlier in the season. Apart from these Bangweulu breeding records, the only other one from south of the equator seems to be one of three young at Lake Kabamba, in the south-eastern Congo, also in October (Chapin 1932).

While the Shoebill is certainly not common in Bangweulu, our observations do at least suggest that it is holding its own there. It is to be hoped that this also applies to another area of swamp in north-eastern Zambia, the Mweru Marsh, enclosing Lake Mweru-wa-Ntipa, where in December 1964 six birds were counted in a single flight (Keith and Vernon 1969).

References:

Benson, C. W. 1961. The breeding of the Whale-headed Stork or Shoe-bill in Northern Rhodesia. *N. Rhod. Journ.* 4(6): 557–560.

Chapin, J. P. 1932. The birds of the Belgian Congo. *Bull. Amer. Mus. Nat. Hist.* 65.

Keith, G. S. and Vernon, C. J. 1969. Bird notes from northern and eastern Zambia. *Puku* 5: 131–139.

Age of acquiring adult plumage in *Gypaetus barbatus*

by Jeffery Boswall

Received 29th May, 1970

With bird species that take several years to acquire adult plumage it is often difficult to know just how long the transition does take. It may therefore be of interest to record that a fully grown nestling Lammergeyer *Gypaetus barbatus*, just ready to fly, brought to Madame D. Sokoloff in Addis Ababa in 1963, about the month of April and kept by her in captivity, had acquired fully adult plumage between 5½ and 6½ years later. I saw the bird in April 1969 and again in April 1970.

It is also of interest to record that the bird's under-parts were off-white in colour, showing no sign whatever of the saffron colouring found in wild individuals. This is consistent with the "rusty" shade being acquired cosmetically as "adherent coloration". See Berthold (*Bull. Br. Orn. Cl.*, 1967: 89–90), and correspondence in *Bokmakierie*, finalised in 21(1), 1969: 24–25.

Animated perches and feeding associations of birds in the Sudan

by G. R. Cunningham-van Someren

Received 3rd April, 1970

This note records the use of animated perches by birds and describes what may be termed bird feeding associations or hunting parties. Observations were made in the Sudan during the months of September to December each year, from 1960 to 1966. In the Blue Nile District around Sennar suitable land is devoted to irrigated cotton and sorghum, several thousands of acres of which are surrounded by vast areas of grass covered flat land between the White and Blue Niles and the River Dinder. The whole area is sparsely treed, trees and bush being, more or less, limited to the river edges. The rains commence in July and continue intermittantly until mid-October or early November, and these produce a dense and rapid flush of various species of grass, particularly *Sorghum* spp. which grow between five and ten feet high. The grasslands produce and shelter a wealth of insects especially large and small Orthoptera of many species and great numbers of Lepidoptera and other small insects, thus there is abundant food. However such tall grass is an unfavourable environment for many insectivorous birds like those that take a great deal of their prey on the wing. Animate objects that provide a "look-out" stance and which disturb the grass and so flushing insects are most acceptable and advantage is taken of them.

The Carmine Bee-eater *Merops nubicus* Gmelin is one of the commonest species and is present in great numbers in September and October, just before the European migrants arrive. They make great use of the animated perch and I have records or photographs of the birds on camels, cattle, donkeys, sheep and goats, and once upon a dog. Grimwood (1964) has recorded his observations on this habit from the Lake Rudolf area of Kenya and quoting Praed and Grant (1962) adds the remark "I am convinced that this behaviour was not for lack of perches . . . but because they are developing Cattle Egret *Bubulcus ibis* (Linnaeus) habits". In the Sudan the use of animated perches is essential in most of the area as there are no natural resting places with a view, but the animated perch is clearly used, both as a resting place and because of the disturbance it creates, as an aid to procuring food which is taken on the wing. Praed and Grant's (1962) statement is supported by my Sudan observations.

Amongst the larger birds, Abdim's Storks *Sphenorhynchus abdimii* (Lichtenstein) are regularly used and they appear very tolerant of their "riders", often twenty or more of these storks can be seen in a flock each carrying a bee-eater and on several occasions two or three bee-eaters were seen on one bird. Other large birds used are Openbill Storks *Anastomus lamelligerus* Temminck, and Cattle Egrets, but the latter for only short periods as they are too active for the bee-eaters. Others used are Arabian Bustards *Ardeotis arabs* (Linnaeus); European Cranes *Megalornis grus* (Linnaeus); Sacred Ibises *Threskiornis aethiopicus* (Latham); and occasionally Marabou Storks *Leptoptilus crumeniferus* (Lesson). Stock or goats travelling through grassland always attract a swirling mass of Carmine Bee-eaters, as does any vehicle. Even man moving through long grass may be accompanied by birds, though I have never seen man used as an animated perch. I have no records of the other species of bee-eater employing animated perches but the European Bee-eater *Merops apiaster* Linnaeus and White-throated *Aerops albicollis* (Vieillot), often in association with the Carmine, will follow stock or a vehicle in long grass.

The associations or hunting parties may be small groups of birds or vast numbers and may consist of many species. The parties follow cattle or goats which cause the primary disturbance in the grass while the birds mingle with the animals. The commonest association was of a few cattle or goats accompanied by the Carmine Bee-eater flying around overhead or resting on the animals, sometimes with Cattle Egrets; the egrets taking grasshoppers on the ground while the bee-eaters took them in flight. A further example was as above but with the participation of Pratincoles *Glareola pratincola* (Linnaeus) (and sometimes a few *G. nordmanni* Nordmann), often hundreds of birds hunting as a flock above egrets or stock. The pratincoles appeared to be taking smaller insects ignored by the bee-eaters. Another association consisted of all the aforementioned with the addition of terns, Whiskered Terns *Chlidonias hybrida* (Pallas), and occasionally White-winged Black Terns *C. leucoptera* (Temminck), which mingled with the pratincoles but hunted in a more individual manner and not as a co-ordinated flock.

The mammals were not always the main disturbing factor, and the larger birds also acted in this capacity, particularly flocks of Abdim's and European Storks, Sacred Ibises and Cattle Egrets. This common combination was accompanied by the Carmine Bee-eaters and sometimes joined by pratincoles and/or terns, and later in October and early November by Swallows *Hirundo rustica* Linnaeus, Sand-Martins *Riparia riparia* (Linnaeus) and House-Martins *Delichon urbica* (Linnaeus). One of the greatest concentrations consisted of some sixteen species—Abdim's and European Storks, Sacred Ibises and Cattle Egrets on the ground; and in the air, three species of bee-eater with pratincoles, terns, swallows and martins; and either on the ground or flying, many wagtails *Budytes* and *Motacilla* spp.

By early November most of the cotton is under regular flood irrigation, and though the local migrants, Abdim's Storks and Carmine Bee-eaters, have moved south, their numbers have been replaced to some extent by Sacred Ibises and European Cranes, which feed daily in the cotton lands. Many species of waders are now also present—commonest, often in flocks of thousands, are Ruffs *Philomachus pugnax* (Linnaeus). Also present are wagtails, swallows, martins, pratincoles and terns.

One of the most impressive congregations was concentrated on a flood basin with long grass and small Acacia trees, which cattle had found. It was one of the last with green grass, and so was well dunged and clearly rich in food insects. This area of open shallow water attracted a great assembly of duck, including several hundreds of Pintail *Anas acuta* Linnaeus, Shoveller *A. clypeata* Linnaeus, Garganey *A. querquedula* Linnaeus and Teal *A. crecca* Linnaeus, as well as vast numbers of waders including Stilts *Himantopus himantopus* (Linnaeus). Hundreds of White Storks *Ciconia ciconia* (Linnaeus) and European Cranes, together with a few Abdim's Storks, were also present. Cattle Egrets were numerous, and there were a few Openbill Storks taking snails washed out of a canal, also a few Glossy Ibises *Plegadis falcinellus* (Linnaeus). Overhead flew terns, pratincoles, swallows and martins, with a few bee-eaters, and on the ground hundreds of wagtails of the genus *Budytes*.

The grasslands of the Sudan abound with insect life, which unless disturbed remains unavailable to many birds, particularly those that take their prey on the wing. Feeding associations involving larger creatures such as mammal plus bird, man/vehicle plus bird, or larger bird with smaller, seem under the circumstances the natural and logical method by which food can be obtained from such a difficult, yet highly productive, environment as the tall grass of the Sudanese plains. These associations are thus to the mutual advantage of many species, and appear to be harmonious gatherings with little obvious competition.

I am grateful to C. W. Benson and Captain C. R. S. Pitman for advice and assistance in the finalisation of this note.

References:

Grimwood, I. R. 1964. The Northern Carmine Bee-eater, *Merops nubicus* Gmelin using animate perches. *Bull. Brit. Orn. Cl.* 84: 105–106.

Mackworth-Praed, C. W. and Grant, C. H. B. 1962. *Birds of the Southern Third of Africa.* London: Longmans, Green.

The nest and nestling of the Short-tailed Paradigalla *Paradigalla brevicauda* (Paradisaeidae)

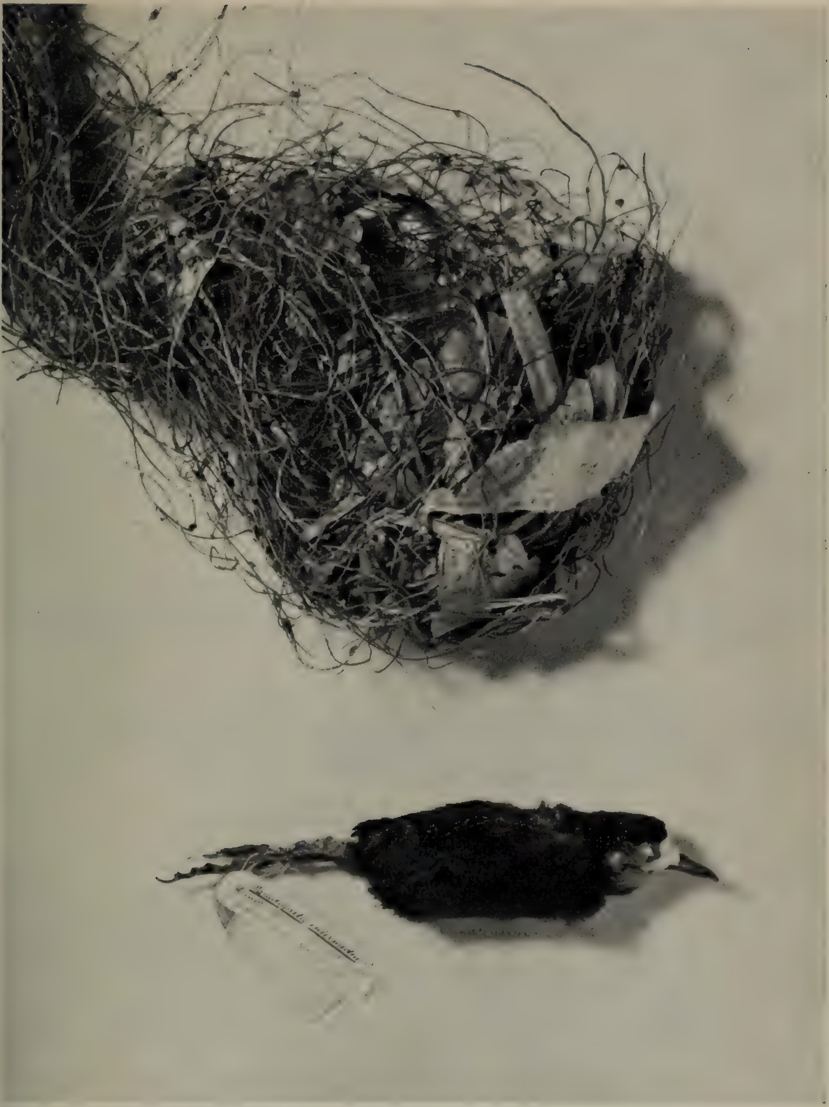
by C. B. Frith

Received 14th April, 1970

Although the birds of paradise have been comparatively well studied as a group there is still a great deal that Gilliard, in his recent monograph (1969), records as "unknown", particularly for the nest and eggs of a number of species. Thus it was with much satisfaction that I found a nest of the Short-tailed Paradigalla (*Paradigalla brevicauda*) in the British Museum collections at Tring, Hertfordshire. This nest was collected with a nestling which I later found in the skin collection in London.

The two specimens described here have been known to exist since their collection, and were referred to by Gilliard (1969), but until now have not been described. They were collected by C. Boden Kloss during the Wollaston Expedition on 27th January 1913 at Camp 9, Utakwa River, Dutch New Guinea, 5,500 feet. (Ogilvie-Grant, 1915).

The nestling (1916.5.30.1074), which is a male, is much like adult birds in general appearance (see plate). The feathering on the body is soft and downlike (more so on the underparts), and is sooty-black with a tinge of deep brown throughout and the back shows a slight purple sheen in certain lights.



Nest and nestling of *Paradigalla brevicauda.*

The crown and nape has not gained the glossy blue-green plumage of the adult, but is uniform in colour with the rest of the plumage. The wattles about the face are the same shape and form as they are on the adult female and of similar size in proportion to the bird. The egg tooth is still visible. All wing feathers are about half grown, but the tail is not visible. The feathering on the upper mandible and throat is just beginning to grow. The measurements are—tarsi 32 mm., wings 83mm., bill (from posterior of nostril) 16mm.

Unfortunately the collector had tied the nest into a compact ball, no doubt for transportation, and I cannot be certain of the exact original shape. The photograph illustrates the nest in what I feel is a position close to its original form. It (N63.1) is a bulky cup made mostly of many leaves, both large and broad and thin and long. The broad leaves measure up to 125mm. long by 35mm. wide. A few of the thin, long leaves measure up to, and in excess of, 160mm. by 16mm. Around the outer leaves is a sparse mesh of creeper tendrils. These tendrils (which do not have enough characters to be identified) are more profuse on one side of the nest and rise above the cup in a thick rope-like knot. Possibly this was part of a live vine that the bird used for material and support at the nest site.

There are a few small odd pieces of moss and fern leaf around the outside of the structure, mostly near the rim of the cup. The nest cup is lined with a thin layer of fine black hair-like fibres, possibly fern rootlets, which measure c. 200mm. in length and c. 0.5mm. in thickness. There are a number of dried droppings in the bottom of the cup.

The exterior measurements are 138mm. in diameter and 111mm. deep, not including the vine "rope". The interior measurements, which are rough approximations due to the tying of the nest, are c. 83 mm. in diameter and 66mm. deep. Unfortunately there is no information regarding the situation of the nest or the habitat.

I am grateful to Frank Greenaway and Tim Parmenter for the photograph.

References:

Gilliard, E. T. 1969. *Birds of Paradise and Bower-birds*. London.
Ogilvie-Grant, W. R. 1915. Report on the birds collected by the British Ornithologists' Union Expedition to Dutch New Guinea. *Ibis, Jubilee Supp.* no.2.

The European Wheatear *Oenanthe oenanthe* (L.) in southern Africa

by R. P. Borrett and H. D. Jackson

Received 23rd June, 1970

Introduction: There are very few records of the European Wheatear *Oenanthe oenanthe* (*L.*) in southern Africa. Alexander (1900: 87) supposedly obtained a male in winter plumage at Zumbo on 16th January 1899. Wilde secured one at Salisbury in 1915, but this specimen was overlooked by Priest (1935), Roberts (1940) and Vincent (1952), and was not reported in the literature until 1957 (Smithers, Irwin and Paterson). Brooke (1959) reported seeing a solitary bird at Barberspan in the western Transvaal on 22nd October 1958. A specimen taken on 22nd December 1963, by von Maltzahn (1964) near Sissekab in South West Africa was identified as *Oenanthe oenanthe* by Prof. J. M. Winterbottom; von Maltzahn also records that he saw two more a week later. Vernon (pers. comm.) saw two on 27th December 1964, at Rainham Farm, Salisbury. Finally, Jackson (1969) reported seeing two, one in partial breeding plumage, on 17th December 1968, at Sua Spit in Botswana, ca. 20° 52′ S., 26° 12′ E.

Alexander's record has been rejected by Benson, Brooke, Dowsett and Irwin (1970); this specimen cannot be found and there is good reason for believing that it may have been a young *O. pileata*. We have examined the specimens taken by Wilde and by von Maltzahn and find that von Maltzahn's specimen is an immature *O. pileata*; we are obliged therefore to reject this record also. Until recently then Wilde's Salisbury specimen provided the only material evidence to suggest that *Oenanthe oenanthe* crosses the Zambezi River on migration. A further three specimens have now come to hand, all taken in Rhodesia, so this opportunity is taken of reviewing the status of this species in southern Africa.

Material: Details of the four Rhodesian specimens are now given. All are in the collection of the National Museum of Rhodesia in Bulawayo.

1. No. NM.70564, ♂ collected in 1915 (exact date not known) by C. Wilde at Salisbury, 17° 49′ S., 31° 03′ E., 1525 metres a.s.l.
2. No. NM. 66882, ? sex, collected on 27th October 1968, by E. W. Lowden Stoole at Tawstock Farm, Chakari, 18° 06′ S., 29° 50′ E., 1110 metres a.s.l.
3. No. NM. 70566, ♂ collected on 22nd December 1968, by R. P. Borrett at Rainham Farm, Salisbury, 17° 46′ S., 30° 53′ E., 1430 metres a.s.l.
4. No. NM. 70567, ♂ collected on 29th December 1968, by H. D. Jackson at Retreat Farm, Salisbury, 17° 55′ S., 31° 02′ E., 1490 metres a.s.l.

Measurements (in millimetres) and weights (in grammes) are:

	1	2	3	4
Wing (chord)	98	93	95	97
Tail	56	57	57	58
Culmen (to skull)	20	20	20	18
Tarsus	28	27	28	27
Weight	—	—	27	25

Plumage and moult: We have compared these specimens with the plumage descriptions of nominate *O. o. oenanthe* (L.) (Witherby in Witherby, Jourdain, Ticehurst and Tucker, 1938: 147–149), and with 54 skins on loan from various institutions; 40 were taken in East Africa, 5 in Zambia, 3 in Malawi and 6 in Europe.

The Tawstock specimen could not be sexed at the time of skinning, but from its plumage we consider it to be a male in post-juvenal plumage. The only signs of moult appear on the mantle, where there are a few feathers in pin; thus moult into first nuptial dress is just commencing in late October. The brown remiges and black ear-coverts of the other three specimens are diagnostic; they are also first year males. The Rainham bird (22nd December) shows very heavy moult of all the contour feathers, while that from Retreat (29th December) has almost attained the first nuptial dress, only a few feathers still growing out. Wilde's specimen shows no sign of moult and in appearance differs from the Retreat specimen only in the extent to which abrasion has exposed the grey of the upperparts; we presume from this, and from an examination of the moult pattern in the other material available, that it must have been collected in February or early March. It is evident from our study that the prenuptial body moult commences in November/December, is heaviest in December/January, and is complete by early February. Witherby's statement (in Witherby *et al.*, *loc. cit.*) that the prenuptial moult takes place in January/February seems to refer more correctly to the completion of moult rather than to the active moult phase.

According to Witherby *et al.* (*loc. cit.*) and Stresemann and Stresemann (1966: 37–38) the juvenile remiges of *O. oenanthe* are retained for more than a year until the first nuptial plumage is lost in July/August. The four specimens from Rhodesia fit this pattern; all the remiges are present, fully grown and juvenile. However, a first year male, taken on 6th March 1933 by R. E.

Moreau at Olmolog on the west side of Kilimanjaro in Tanzania, has three adult remiges, the innermost secondary on the left wing and the inner two on the right wing. Of the 16 first year males examined, this is the only one which shows any adult remiges. Vaurie (1949: 14) has previously noted that males occasionally replace the two innermost secondaries during the prenuptial moult.

Witherby *et al.* go on to say that the juvenile rectrices too are not replaced at the time of the first moult but are retained until lost with the remiges a year later. Adult rectrices have a black sub-terminal bar edged terminally with white, and so are easily distinguished from a juvenile's which have a brown sub-terminal bar edged with buff. We find that adult rectrices appear in all four Rhodesian specimens at random as follows (numbering centrifugally): Tawstock, L2 and L4 (L3 is damaged, L5 and L6 are juvenile, L1 and R1–6 are missing, apparently shot out); Rainham, R1 (remainder juvenile); Retreat, L1, L2, and R5 (remainder juvenile); and Wilde's specimen L2 (remainder juvenile). All adult rectrices are fully grown, so were apparently acquired at the time of the post-juvenal moult. Exactly half of the 16 first year males examined show one or more adult rectrices.

It is remarkable that so many adult flight feathers occur in the sample of first year males examined, and we believe the incidence to be too high for these to be regeneration feathers replacing feathers lost accidentally.

Taxonomy: It is clear from the measurements given by Witherby *et al.* (1938: 150) and by Mackworth-Praed and Grant (1951: 236) for *O. oenanthe leucorrhoa* that the wing lengths of the Rhodesian specimens are too short to fit this taxon. It has been suggested by Benson (1956: 602) that two of the specimens from Zambia may be *O. o. libanotica*, but more recently Benson *et al.* (1970) have reconsidered the matter and concluded that they should be referred to the nominate form. We have examined them and agree with their findings; in fact, we now follow Ripley (in Mayr and Paynter, 1964: 124) who sinks *libanotica* in the synonymy of nominate *oenanthe*. The Rhodesian specimens are thus referred to the nominate form.

Status in southern Africa: Ripley (in Mayr and Paynter, *loc. cit.*) states that *O. o. oenanthe* winters *inter alia* in Rhodesia; the material recently collected lends some weight to this statement, but it can as yet hardly be said that it is present regularly anywhere in central or southern Africa. It is quite clear that the wintering grounds are well to the north of the Zambezi river, mainly in East Africa, and that it is only the occasional vagrant that appears in southern Africa. These vagrants rarely reach the eighteenth parallel. Often it is the young birds of a species that wander furthest on migration and in this case again it would appear that most of the vagrants are first year birds. This is unfortunate because of the ready confusion in the field with immature *O. pileata*; it makes the evaluation of sight records difficult and we would urge extreme caution in field identification.

Vernon's (pers. comm.) detailed description, made at the time, leaves us in no doubt as to the correctness of his identification of the birds seen at Rainham Farm, so we have no hesitation in drawing upon his field notes when discussing habitat and behaviour later in this paper.

Jackson's record (*op. cit.*) from Botswana is also considered satisfactory since one of the birds seen was in partial adult male plumage, and since he collected a similar bird on Retreat Farm within a fortnight of seeing the birds in Botswana. Brooke's Transvaal record (*op. cit.*) is less satisfactory since it concerns the plumage phase most likely to be confused with *O. pileata*. Von

Maltzahn's sight records (*op. cit.*) cannot be considered, in view of the specimen collected being *O. pileata*.

We consider the status of *Oenanthe oenanthe* in southern Africa to be that of an occasional vagrant, perhaps penetrating further south in some years than in others.

Habitat and behaviour: Lowden Stoole (*in litt.*) records that the Tawstock specimen was collected in an open area of some four acres, consisting mainly of old cattle pens. Although situated near some Miombo woodland the pens were quite bare, the only vegetation being clumps of dry grass and weeds with patches of bare red earth. There were no stones but the concrete troughs and fence rails of the pens provided the bird with elevated perches from which to view the approach of an intruder. It was first seen on 19th October, and subsequently on the 24th, 26th and 27th, when it was collected; on each occasion it flew up from the floor of the pens to perch on a fence-rail. Apart from one mid-afternoon observation, these sightings were all made in the early hours of the morning; the bird not being found in the heat of the day. It did not appear to visit the nearby pastures of freshly-mown *Chloris gayana;* in our opinion this would be due to the absence of suitable perches and bare patches in such habitat. It was not heard to make any sound or seen to indulge in any wing or tail flicking.

The Rainham specimen was collected in an open area of short grassland with bare patches and numerous low termite mounds. It was first seen at 11.30 a.m. on 22nd December, on the shaded face of an outcrop of balancing granite boulders. On being flushed it flew from one termite mound to another, frequently flicking its wings and bobbing its tail; it was rather wary, not permitting a close approach. At times it was seen feeding from the top of a termite mound and was heard giving a low warble and also a call note reminiscent of the "chack" note of a Stonechat *Saxicola torquata*. According to Tucker (in Witherby *et al.*, 1938: 146) there are no records of song in Africa, and Mackworth-Praed and Grant (1963: 142) say "a silent bird in Africa". It appeared to favour the vicinity of the rock outcrop, the impression gained being that it was deliberately seeking shade in the heat of the day.

Vernon (pers. comm.) saw his birds in the same area of Rainham Farm where Borrett collected his specimen four years later, also noting both the song, described as a warbler-like undertone, and the call, given as "stsk tsk", reminding him of the Familiar Chat *Cercomela familiaris*.

The Retreat specimen was collected in an area of recently cleared woodland, with tree stumps and small piles of brushwood remaining, the only other perches available being small scattered granite boulders and termite mounds. This bird was difficult to approach, flying from perch to perch and occasionally dropping to the ground, but nevertheless remaining within an area of some five acres; this reluctance to leave the "territory" was noted in the Rainham bird also. At Retreat a second individual of *O. oenanthe* was present in the same field and also in an adjoining field, which was fallow, very open, and with only a few perches available in the form of dry weeds and clods of earth. This bird, which was generally pale brown in colour, had been seen there a week earlier, when it displayed similar behaviour to the one collected. We were particularly struck by its "nervous" actions and extreme wariness compared to that of the local Capped Wheatear *O. pileata*, which were occupying the same field a few months earlier.

It is clear that *O. oenanthe* is partial to open areas in which to winter, just as it prefers such a habitat during the breeding season (Tucker, p.145, and

Jourdain, p.146, in Witherby *et al.*, 1938). We believe, however, that perches are essential in the habitat, even though they be no more than minor prominences on the landscape. Such habitats are often the result of human activity and most of the birds we have found have been within sight and sound of farm buildings; even in Botswana the two seen by Jackson were only a few yards from the buildings of a weather station, the only habitation for many miles.

The low warble uttered by the Rainham birds appears to be the first record of the species singing in Africa; otherwise the behaviour in general observed in Rhodesia agrees well with that described by Tucker (*loc. cit.*) for the breeding grounds in Britain.

Food: A cursory examination of the stomach contents of the Tawstock specimen revealed a predominant number of apterous termites plus ants and other small insects (Lowden Stoole, *in litt.*). A more detailed analysis of the stomach contents of the Rainham and Retreat specimens provided the following data:

Rainham:	Isoptera, 102 heads of worker termites and one soldier termite. Coleoptera, one dung beetle (Scarabaeidae) and numerous thoraxes and legs of beetles. Many small pieces of grit and chitinous fragments.
Retreat:	Diplopoda, a few segments of one millipede. Coleoptera, 13 small grey and two very small brown weevils (Curculionidae). Hymenoptera, two heads of bees. Small amount of very fine grit. Numerous chitinous fragments, mainly from Curculionidae.

The data on food adds little to Jourdain's (*loc. cit.*) summary, other than the Isoptera which are of course absent from the British Isles.

Acknowledgments: Comparative material was loaned by the British Museum (Natural History) (per Dr. D. W. Snow), the Durban Museum (per Mr. P. A. Clancey), the National Museum, Bulawayo (per Mr. M. P. Stuart Irwin), the Transvaal Museum (per Mr. O. P. M. Prozesky) and the South African Museum (per Prof. J. M. Winterbottom). The original data on Wilde's specimen were traced by the Director, National Museums of Rhodesia, Mr. R. H. N. Smithers. The Acting Curator of the Queen Victoria Museum, Salisbury, Mr. M. A. Raath, provided us with study facilities and assisted in other ways. We are pleased to acknowledge the assistance rendered by these institutions and their officers.

Mr. E. W. Lowden Stoole and Mr. C. J. Vernon kindly allowed us to quote from their field notes. The identification of stomach contents of the specimens collected was carried out by Mr. K. J. Wilson of the Rhodesia Department of Research and Specialist Services. Dr. R. M. Harwin and Mr. M. P. Stuart Irwin commented on the draft of the paper, and assistance was also rendered by Mr. C. W. Benson. To these people too we extend our thanks for their considerable help.

Summary: The status of *Oenanthe oenanthe* in southern Africa is reviewed in the light of three new specimens recently collected in Rhodesia and it is concluded that the main wintering grounds lie well to the north of the Zambezi river, the species only occasionally reaching southern Africa, when vagrants, usually young birds, wander further afield. The specimens are referred to the nominate subspecies.

Plumage and moult are discussed. The prenuptial body moult takes place

in December/January. Adult rectrices appear at random in eight of the sixteen first year males examined, and adult remiges in one of them; it is considered unlikely that these have been replaced feathers lost accidentally, but that the prenuptial moult in first year males is often not confined to the body feathers.

Habitat preference, food preference and behaviour in Rhodesia are discussed and found to be similar to that recorded for the British Isles, except that vocalisation in the winter quarters is noted for the first time.

References:
Alexander, B. 1900. An ornithological expedition to the Zambezi river. *Ibis* Ser. 7, 6(21): 70–109.
Benson, C. W. 1956. New or unusual records from Northern Rhodesia. *Ibis* 98: 595–605.
Benson, C. W., Brooke, R. K., Dowsett, R. J. and Irwin, M. P. S. 1970. Notes on the birds of Zambia. Part V. *Arnoldia, Rhod.* 4(40): 59pp.
Brooke, R. K. 1959. Avian highlights of a journey across southern Africa. *Ostrich* 30: 82–83.
Jackson, H. D. 1969. Notes on a collection of birds from the Khwae river in Botswana. *Arnoldia, Rhod.* 4(24): 1–9.
Mackworth-Praed, C. W. and Grant, C. H. B. 1951. On the races of the Wheatear *Oenanthe oenanthe* (Linnaeus) occuring in Eastern Africa. *Ibis* 93: 234–236.
— 1963. *Birds of the southern third of Africa*, Vol. 2. Longmans, London.
Mayr, E. and Paynter, R. A. (Eds.) 1964. *Check-list of birds of the world*, Vol. 10. Harvard Univ. Press, Cambridge, Massachusets.
Priest, C. D. 1935. *The birds of Southern Rhodesia*, Vol. 3. William Clowes, London.
Roberts, A. 1940. *The birds of South Africa*. Central News Agency, Johannesburg.
Smithers, R. H. N., Irwin, M. P. S. and Paterson, M. L. 1957. *A check list of the birds of Southern Rhodesia*. Rhodesian Ornithological Society, Cambridge University Press.
Stresemann, E. and Stresemann, V. 1966. Die Mauser der Vogel. *J. Ornithol.*, 107: 1–53. (English translation of the General Section prepared by Susan Kalma).
Vaurie, C. 1949. Notes on the bird genus *Oenanthe* in Persia, Afghanistan and India. *Amer. Mus. Novit.* 1425: 1–47.
Vincent, J. 1952. *A check list of the birds of South Africa*. Cape Times, Parow.
von Maltzahn, H. 1964. Wheatear (*Oenanthe oenanthe* (L)) in South West Africa. *Ostrich* 35: 123–124.
Witherby, H. F., Jourdain, F. C. R., Ticehurst, N. F. and Tucker, B. W. 1938. *The handbook of British birds*, Vol. 2. Witherby, London.

On *Prodotiscus insignis* (Cassin) parasitising *Zosterops abyssinica* Guérin

by G. R. Cunningham-van Someren

Received 3rd April, 1970

On 23rd February, 1970, a nearly completed cup nest of *Zosterops abyssinica flavilateralis* Reichenow was found about four feet up in a coffee tree near indigenous forest at Karen near Nairobi, Kenya. On 25th February the first egg was laid and a second on the 26th, both being light blue.

The writer was away from Karen from 26th February to 12th March but on the 13th visited the nest to find a single very small chick which was obviously only a few days old and was not that of a *Zosterops*. A thorough search around the tree and in the vicinity was made but no evidence was found of *Zosterops* eggs or chicks or other egg shell.

The chick was virtually naked brownish orange in colour with a pale yellow bill and orange gape. There was no evidence of mandibular or maxillary hooks. Traces of emerging quill were present on the back, head, flanks, wing and tail.

The nest was inspected daily to watch progress of the nestling whose growth was very rapid and by 22nd March bursting quills were present on the head, neck, back, flanks, breast, wings and tail. At this stage the nestling was identified as a *Prodotiscus*, the central dark and outer white tail feathers being considered a diagnostic character. The bill had by now darkened to a dull horn with a light yellow tip and gape bright orange.

The *Zosterops* were very confiding and allowed the writer with camera to operate within three feet of the nest. A series of photographs was taken. The *Zosterops*, both birds, fed the young honeyguide at approximately five minute intervals and after some six or seven meals the young bird would wriggle to the nest edge, raise itself towards the edge and pass a dropping which would be collected by the foster and disposed of. The food brought was always caterpillars of an inch or so in length. These were found in nearby coffee and bush and when captured they were beaten violently against a branch or twig, then brought to the nest and given to the nestling.

On 27th March a further series of photographs were taken and by this time the nestling was feathering up well and almost completely covered. The belly was pale grey, whiter at the vent, with breast and flanks pale grey. The head was dark grey with a faint wash of green, with the neck and back grey washed greenish yellow. The wings were greenish washed with yellow. Outer tail feathers white cream to the tip and the central tail feathers dark, almost black and about one inch long. Eyes black and bill dark horn, slight yellow tip with orange gape. Legs and feet light lead grey with no unusual features.

Feeding was still very regular at intervals of a few minutes. The *Zosterops* would call on arrival at the tree and sometimes as it made its way towards the nest. The calls would sometimes be answered by the honeyguide with a repeated low faint "Chee-up", a chirp. The honeyguide called several times when the fosterers were not present. When the call was imitated by the writer, usually when the young bird was asleep, the *Zosterops* became very agitated, hopping about the bush near the nest, listening and peering about and moving to the nest. The young bird went to sleep immediately after each meal, tucking its head into the mantle and back feathers above the wings.

As soon as the fosterers appeared in the tree and called, the youngster would wake up, occasionally answering the fosters' call, open its eyes, crane its head, open its bill and await the meal. Larger caterpillars were now being brought to the nest and on two occasions the offering was a moth, one of which, with wings part spread, was a great deal bigger than the honeyguide's head; however this was readily taken and swallowed. On another visit some small insects were brought, a beakfull of which appeared to be aphids, which the bird was seen rapidly collecting from the young shoot of coffee near the nest.

Friedmann (1955) remarks that "all that is known of the food of the young is that the fledgling . . . had a mass of small oval seeds with orange pulp and a few small lepidopterous larvae in its gizzard". The fruit was probably that of *Loranthus* spp., for both *Z. a. flavilateralis* and *Z. senegalensis kikuyuensis* Sharpe take these. The fosterers at the Karen nest were often seen taking the small fruits of *Trema guinensis* but these were not offered to the nestling. Van Someren (1956) refers to the food brought to a nestling *Prodotiscus insignis* by *Platysteria peltata jacksoni* as moths, flies, etc., i.e. the young honeyguide was given food that the flycatcher would normally give to its own young. It would be most unlikely that the fosterers would cater especially for their young parasite.

From the dates, the *Prodotiscus*, now clearly the species *insignis*, must have been laid about 28th February, as the chick was obviously a few days old on 13th March, and taking 10–12 days as the incubation period, the egg would have hatched on 9th or 10th March. What happened to the *Zosterops* eggs or chicks is unknown; were they removed by the female *Prodotiscus* or were they ejected by the young honeyguide? Unfortunately there was no evidence to suggest what had happened.

The fledgling honeyguide left the nest on 30th March for a few hours but remained nearby in the tree eventually returning to the nest. On 31st March the fledgling was out of the nest in the early morning attended by the *Zosterops* but by 10.30 a.m. it had disappeared. Despite searches at intervals throughout the day no trace of it or the fosterers was found; it had clearly flown some distance away. It did not return to the nest in the evening. Thus the nestling stage was around 20 days, which is about the same as that of *Zosterops*.

It is worth mentioning that Vernon (1968) records a fledged juvenile *Prodotiscus insignis* in a party of *Zosterops senegalensis* in Rhodesia. I must thank Dr. H. Friedmann for valuable comments on this note.

Finally, it should be made clear that the *Zosterops* nomenclature followed in this note is that of White (1963).

References:
Friedmann, H. 1955. *The Honey-Guides*. Bulletin 208, U.S. National Museum.
van Someren, V. G. L. 1956 Days with Birds. *Fieldiana Zool.* 38: 1–520.
Vernon, C. J. 1968. A year's census of Marandellas, Rhodesia. *Ostrich* 39: 12–24.
White, C. M. N. 1963. *A revised check-list of African flycatchers*, etc. Lusaka: Government Printer.

POSTSCRIPT

A week after the fledgling left the nest a young honeyguide was found near the nest site accompanied by a pair of *Zosterops*. These were almost certainly the nest family. The honeyguide was finding its own insect food but was also begging, with calls for food and it was fed several times by the *Zosterops*. The three birds flew into a *Trema guinensis* tree where they joined several *Z.s. kikuyuensis* and all including the honeyguide were noted to be taking the small purple *Trema* fruit. Three days later the honeyguide was again seen accompanied by the *Zosterops*.

An examination of the old nest revealed a number of small hard seeds and fruit skins, which were subsequently identified as those of *Trema*. These were pressed into the base of the nest suggesting that the fruit had been presented to the youngster which had been unable to digest the skins and seeds.

Some Rhodesian and Mozambique records of the Bronze-naped Pigeon *Columba delegorguei* Delegorgue

by M. P. Stuart Irwin and C. W. Benson

Received 11th April, 1970

Benson and Irwin (1966) discussed three females of *Columba delegorguei*, collected in August 1965 and January 1966 on the Haroni River, in the Melsetter District, Rhodesia, at 20° 02′ S., 33° 01′ E., 1,250 feet above sea-level, the first specimens from that territory. In the absence of males it was not found possible to determine the subspecies. Three males have since been collected by the Mashonaland branch of the Rhodesian Schools Exploration Society for the National Museum of Rhodesia, Bulawayo, in the Makurupini Forest, on the Haroni River (co-ordinates as already quoted), at 1,400—1,500 feet a.s.l., on 8th and 16th January, and 1st September, 1969. They were lent to Benson for comparison with material in the British Museum (Natural History).

Males of the northern (Kenya and southern Sudan) *C. d. sharpei* (Salvadori) and the southern (South African) *C. d. delegorguei* are easily distinguished and are good subspecies. As Goodwin (1967) points out, reddish purple is lacking on the upperparts, which, where not iridescent or white, are entirely slaty black, particularly on the mantle and wing-coverts. Also, the iridescence on the nape is green rather than lilac, and there is generally less mauvish pink on the underparts, more especially on the abdomen. Benson and Irwin (1966) specify the Usambara Mts., in north-eastern Tanzania, and Cholo Mt., in southern Malawi, as localities where intermediates occur. The Rhodesian specimens are also intermediate. On the mantle and wing-coverts they are distinctly less reddish than in two from Zululand, in fact even than in one of three from the Usambaras. On the nape they show an admixture of green and lilac iridescence. On the underparts one is badly damaged, though the other two agree fairly well with the two from Zululand. But this does not seem particularly significant, since one each from the Usambaras and Cholo are no less mauvish pink in this region.

The Rhodesian specimens have wing-lengths 178, 179, 185 mm., thus on average a little longer than in Rhodesian females; see below, and Benson and Irwin (1966), whose figures show a tendency for females to be slightly the smaller in other areas too.

While the Haroni and Lusitu Rivers, along with the adjacent Makurupini Forest, form the boundary with Mozambique, there are still no published records from that territory, although H. D. Jackson (pers. comm. to Irwin) informed him that he and C. J. Vernon have heard it calling in tall riparian forest on the Mozambique bank of the Lusitu. An intermediate locality between this one and Cholo has recently been discovered. On 20th November, 1969 Irwin collected a female (wing 170 mm.) on the southern face of Gorongoza Mountain, 18° 30′ S., 34° 03′ E., at 5,000 feet a.s.l. The species proved to be common in tall forest at 4,000—5,000 feet, and a few birds were heard calling almost to the summit at 6,000 feet. A substantial population would appear therefore to exist on this isolated massif, which suppports a extensive montane forest, estimated by K. L. Tinley (*in litt.*), on the basis of aerial photographs, to exceed 40 square km.

Along the eastern frontier of Rhodesia there is still no evidence that *C. delegorguei* exists except at the one locality. It might perhaps have been expected in the extensive forests on the eastern slopes of the Inyanga Highlands, particularly on Inyangani, within sight of Gorongoza, some 65 miles to the west across the Manica Platform. But Irwin, who spent over five weeks collecting in these forests in October 1966 and March 1970, found no sign of it, and is satisfied that it does not occur. The Inyanga forests, above 4,000 feet in particular, lack the great height of those on Gorongoza at corresponding altitudes, and as elsewhere for some reason may be ecologically unsuited to this pigeon of largely relict distribution.

Benson is grateful to Derek Goodwin for examining Rhodesian males with him in the British Museum. Goodwin agrees that they should be regarded as intermediate between the two subspecies.

References:

Benson, C. W. and Irwin, M. P. Stuart. 1966. The Bronze-naped Pigeon, *Columba delegorguei* (Delegorgue), in Rhodesia. *Arnoldia* (*Rhodesia*) 2(23).

Goodwin, D. 1967. *Pigeons and doves of the world.* London: British Museum (Natural History).

Two new shrikes for Kenya

by P. L. Britton

Received 11th May, 1970

Lake Kanyaboli forms the north-eastern boundary of Yala Swamp in extreme western Kenya, and figures prominently as a locality for papyrus-frequenting species in Britton and Harper (1969). During further activities in this area in 1969 I obtained *Laniarius mufumbiri* Ogilvie-Grant in papyrus and *Lanius nubicus* Lichtenstein in adjacent Acacia savanna. Neither is previously known from Kenya.

Laniarius mufumbiri

♂, 14th September, Yala Swamp; imm ♀, 21st September, Lake Kanyaboli; ♂, 29th November, Lake Kanyaboli.

This gonolek is strictly confined to papyrus swamps from west of Lake Edward to Mt. Elgon (Hall and Moreau, in press), and the above specimens represent an extension of known range. It is common in Yala Swamp and in the papyrus fringing Lake Kanyaboli, and in the course of a six hour canoe journey through the interior of the swamp it was one of the most noticeable species, due to its repeated calling.

Moreau (1966) has drawn attention to the large concentration of breeding shrike species in Kenya, but none of these is typically an inhabitant of papyrus, although *Tchagra m. minuta* (Hartlaub) occurs alongside *L. mufumbiri* in the more open areas of papyrus close to, or at, the swamp edge. *Mufumbiri* is smaller than other gonoleks and it is the only one sympatric with another (Hall and Moreau, *op. cit.*). The sympatric *L. barbarus erythrogaster* (Cretzschmar) is common in *Lantana* thickets and other low cover bordering the swamp and it frequently wanders to the swamp edge where I have twice seen *mufumbiri*, once chasing *barbarus*. They are, then, virtually segregated ecologically, and the smaller *mufumbiri*, with quite different bill and feet, presumably takes different food. The stomach of the November specimen contained ants (Formicinae, Myrmicinae) and beetles (Carabidae, Curculionidae, Elateridae, Lagriidae, Staphylinidae). Measurements (mm and grammes) from Central Nyanza are:

	Mufumbiri	*Barbarus* (15 unsexed birds)
Wing	♂♂ 95, 98 imm ♀ 86 o 93	98–109 (101.0 ± 3.1)
Weight	♂♂ 45, 46 imm ♀ 40 o 45	42–56 (51.1 ± 3.6)

The description of the immature plumage in Mackworth-Praed and Grant (1955) is very misleading, being quite unlike that in either van Someren (1922) or Jackson (1938). It is probably derived from an almost fully moulted bird. The four immature *L. barbarus erythrogaster* in the collection of the British Museum (Nat. Hist.) illustrate this problem well, for two are truly immature (with very little crimson) whereas the others differ little from the adult. My immature was probably fairly young as it was accompanied by an adult and its skull was little ossified. It conforms very closely with the "first plumage" description in van Someren (*op. cit*).

Mackworth-Praed and Grant (*op. cit.*) consider *mufumbiri* conspecific with nominate *barbarus* and use the English name Gonolek. This is confusing as it is also used to describe all *Laniarius* with crimson underparts. I suggest the name Papyrus Gonolek for *mufumbiri* as it reflects the unusual ecology of this species.

Lanius nubicus

Imm, 9th November, Lake Kanyaboli, wt. 21.0g, wing 90mm, two innermost primaries in pin (innermost more advanced).

Mackworth-Praed and Grant (*op. cit.*) and White (1962) record this palearctic migrant south to Lake Rudolf. Archer and Godman (1961) describe its wintering range in more detail and the Lake Rudolf record is in fact "probably somewhere near Lake Rudolf", this and Lake Albert (Chapin 1954) being the only known localities south of 10° N.

The immature from Lake Kanyaboli must be considered a vagrant and it is interesting that it was present at a time of exceptional abundance of palearctic migrants of several species, including *Lanius senator niloticus* (Bonaparte).

ACKNOWLEDGMENTS

I would like to thank the following staff of the British Museum (Nat. Hist.): P. R. Colston for identifying the *Lanius nubicus* specimen and arranging the loan of immature *Laniarius barbarus erythrogaster* material; P. M. Hammond and R. T. Thompson for identifying the beetles; and R. A. Bourne for identifying the ants.

References:

Archer, Geoffrey and Godman, Eva M. 1961. *The Birds of British Somaliland and the Gulf of Aden.* Vol. 4. Oliver and Boyd, Edingburgh & London.

Britton, P. L. and Harper, J. F. 1969. Some new distributional records for Kenya. *Bull. Brit. Orn. Cl.* 89: 162–165.

Chapin, J. P. 1954. The birds of the Belgian Congo, 4. *Bull. Am. Mus. Nat. Hist.* 75B.

Hall, B. P. and Moreau, R. E. in press. *An Atlas of Speciation in African Passerine Birds.* Trustees of Brit. Mus. (Nat. Hist.), London.

Jackson, F. J. 1938. *The Birds of Kenya Colony and Uganda Protectorate.* Gurney and Jackson, London.

Mackworth-Praed, C. W. and Grant, C. H. B. 1955. *Birds of Eastern and North-eastern Africa.* Vol 2. Longmans, Green and Co., London.

Moreau, R. E. 1966. *The Bird Faunas of Africa and its Islands.* Academic Press, London and New York.

van Someren, V. G. L. 1922. Notes on the birds of East Africa. *Nov. Zool.* 29: 1–246.

White, C. M. N. 1962. *A revised check list of African shrikes,* etc. Government Printer, Lusaka.

Buccal colours in some sunbirds

by R. K. Brooke

Received 19th June, 1970

I (Brooke 1970) drew attention to the variation with age, sex and reproductive condition of the buccal or palate colours of sunbirds with particular reference to *Nectarinia bifasciata* (Shaw). Two published references to this matter in African sunbirds were overlooked: Bates (1911) recorded that *N. batesi* (Ogilvie-Grant) and *N. minulla* (Reichenow) had nestlings with orange palates and Swynnerton (1916 with coloured plates) recorded the same colour for a nestling *N. venusta* (Shaw and Nodder) and black for an unsexed adult. Brooke (1970) records orange as the buccal colour of a nestling *N. cuprea* (Shaw) and that fledged juvenals of *N. bifasciata* and *N. sovimangv* (Gmelin) have orange-yellow or rich yellow colours. I have collected a female *N. senegalensis* (L.) in post juvenal moult on 22nd March near Salisbury in Rhodesia with orange buccal colour. It would appear that orange is the normal, if not invariable, colour in juvenal *Nectarinia* and that variation in buccal colour is a feature of the adults only.

Three adult male *N. senegalensis* had a brownish-grey, a dusky brown and a dusky red colour, and two apparently adult females had, the one yellow in front and pink behind, i.e. towards the throat, and the other dusky yellow. Mees (1970) took a male, presumably adult, with a black mouth at Inyanga in Rhodesia. He also records a female *Anthreptes collaris* (Vieillot) with an orange-yellow mouth.

Swynnerton (1916) considered that the bright buccal colours of nestlings intimidated predators and/or reminded them that the nestlings were not as palatable as they were easy to take. This is probable enough but seems inadequate when applied to adults with their varied colours, most contrasting with the frontal plumage and some like adult male *N. senegalensis* not contrasting with the dark head.

References:
Bates, G. L. 1911. Further notes on the birds of southern Cameroon. *Ibis* 9 (XX): 581–631.
Brooke, R. K. 1970. The buccal colours, weights and races of *Nectarinia bifasciata*. *Bull. Brit. Orn. Cl.* 90(1): 11–14.
Mees, G. F. 1970. Birds of the Inyanga National Park, Rhodesia. *Zool. Verhan.* 109: 1–74.
Swynnerton, C. F. M. 1916. On the colouration of the mouths and eggs of birds. *Ibis* 10: IV(2): 264–294.

Further records of *Camprimulgus europaeus plumipes* Przhevalski in south-eastern Africa

by H. D. Jackson

Received 20th April, 1970

Borrett and Jackson (1970) have shown that *Caprimulgus europaeus plumipes* winters in south-eastern Africa; they give particulars of four specimens from this area. A further two specimens have since been secured, one providing the first record of this subspecies in Mozambique, and the other extending the altitudinal limit of the known distribution in winter:—

1. No. 69374, imm. ♂ collected on 28th November, 1969, by M. P. Stuart Irwin near Chiniziua, Mozambique, at 19° 00′ S., 35° 16′ E., 100 metres a.s.l.

This specimen was taken in a forest/savanna mosiac on coastal alluvium. It was carrying a remarkable amount of fat, at least 9 g. being scraped off the body; total weight of the fresh specimen was 65.6 g. For this information I am obliged to Mr. Stuart Irwin, Keeper of Ornithology at the National Museum, Bulawayo, where the specimen is now lodged.

2. No. UM. 1166, ad. ♂ collected on 2nd April, 1970, by G. Spence at Umtali, Rhodesia, at 18° 58′ S., 32° 40′ E., 1100 metres a.s.l.

Mr. Spence found this bird lying with a broken wing on the grassed island along the centre of a dual carriageway tarmac road in the middle of the town; it had presumably been hit by a car the previous night. I am obliged to him for bringing the bird to me at the Umtali Museum, where the specimen is now lodged. It had no fat deposits and weighed 57.0 g. This record is further inland and at a higher altitude than any of the previous records.

Reference:
Borrett, R. P. and Jackson, H. D. 1970. The winter quarters of *Caprimulgus europaeus plumipes* Przhevalski. *Bull. Br. Orn. Cl.* 90(1): 25–26.

A new record for Algeria

by B. P. Hall

Received 14th May, 1970

In the course of a tour of the Algerian Sahara organised by Desertways Expeditions, I visited the village of Amsel, 15 miles south of Tamanrassat. Here there is good water and a government agricultural project.

On 12th April, 1970, in tamarisk trees alongside the stream, I watched for about 15 minutes two Silverbills, *Lonchura malabarica* (= *Eudice cantans*). I was accompanied by Major P. H. Cordle and Miss P. L. Wright and we all had a good view of them with field glasses, so there was no possibility of misidentification.

The species has not before been reported from Algeria though is not unexpected as it breeds at Atar in Mauretania in the same latitude (Etchécopar and Hüe 1964 *Les Oiseaux du Nord de l'Afrique*, Paris: 557).

Notes on the plumage of Buzzards from Socotra

by P. G. H. Frost and W. R. Siegfried

Received 9th April, 1970

INTRODUCTION

The discussions by Benson & Irwin (1963) and Moreau (1966) on the relationship between the endemic Buteo occuring on the island of Socotra, and the various mainland Buteos, have prompted us to examine the plumage of this as yet undescribed bird. The basic plumage characteristics of the small resident African Buteos (*Buteo oreophilus oreophilus* in East Africa and *B. o. trizonatus* in South Africa) and the palaearctic migrant *B. buteo vulpinus* have recently been reviewed (Siegfried & Frost, in press), and it seems appropriate at this stage to provide a general description of the Socotran Buzzard *Buteo* sp., pending publication of a review of the phylogenetic origins of the small African Buteos (Siegfried, in press).

MATERIAL

So far as can be established there are six specimens of buzzards from Socotra. Four are located in the British Museum (Natural History), and are those referred to by Benson & Irwin (1963) and Ripley & Bond (1966). The two other specimens are housed in the Liverpool Museum collections (Wagstaffe, *in litt.* 1969). During 1969 one of us (P.G.H.F.) examined the British Museum material. Acquaintance with the Liverpool Museum material is solely through notes and photographs kindly supplied by R. Wagstaffe, Keeper of Vertebrate Zoology at the museum. A further series of nine colour slides of wild birds photographed in Socotra, and supplemented with field notes, were lent to us by A. D. Forbes-Watson of the National Museum, Nairobi. All this material is described separately, but the whole is considered in the discussion on the relationships of the Socotran Buzzard.

If we apply the same criterion for ageing small Buteos as reviewed previously by us (Siegfried & Frost, in press), that is, the width of the subterminal tail band compared with the width of the more proximal tail bands, it appears that the British Museum material consists of two adult birds (with broader subterminal tail bands) and two juvenile first-year birds (with subterminal tail bands equal in width to the more proximal tail bands). Of the latter, one is a well grown fledgling of a pair collected from a nest in eastern Socotra (Ogilvie-Grant & Forbes, in Forbes 1903). The other fledgling of this pair is housed at Liverpool together with an immature bird also collected by Ogilvie-Grant (Wagstaffe, *in litt.* 1969).

The collection data for these six specimens are recorded in Table 1 and mensural data in Table 2.

DESCRIPTION OF BRITISH MUSEUM MATERIAL

Immature First Year Birds

Underparts: The ground colour of the underparts is cream white with a heavy suffusion of buff in the feathers of the upper breast and thighs. This suffusion is least extensive in the older juvenile bird and is confined to broad

TABLE 1 COLLECTION DATA ON BUZZARDS FROM SOCOTRA

Catalogue No.	*Age/Sex*	*Date*	*Locality*	*Collector*	*Reference to Plates 1 and 2*
B.M.99.8.11.10	Ad/Unsexed	28.1.99	Elhé	Ogilvie-Grant & Forbes	A
B.M.99.8.11.11	Fledg./♀	22.1.99	Hamidero	Ogilvie-Grant & Forbes	C
Liverpool 296	Fledg./♂	22.1.99	Hamidero	Ogilvie-Grant & Forbes	—
Liverpool 253	Imm./♂	17.1.99	Dimichiro	Ogilvie-Grant & Forbes	—
B.M.1934.8.12.2	Ad/♂	9.3.34	Momi	M. T. Boscawen; see Moreau (1966: 354) for details	B
B.M.1934.8.12.3	Juv/♀	9.3.34	Momi		D

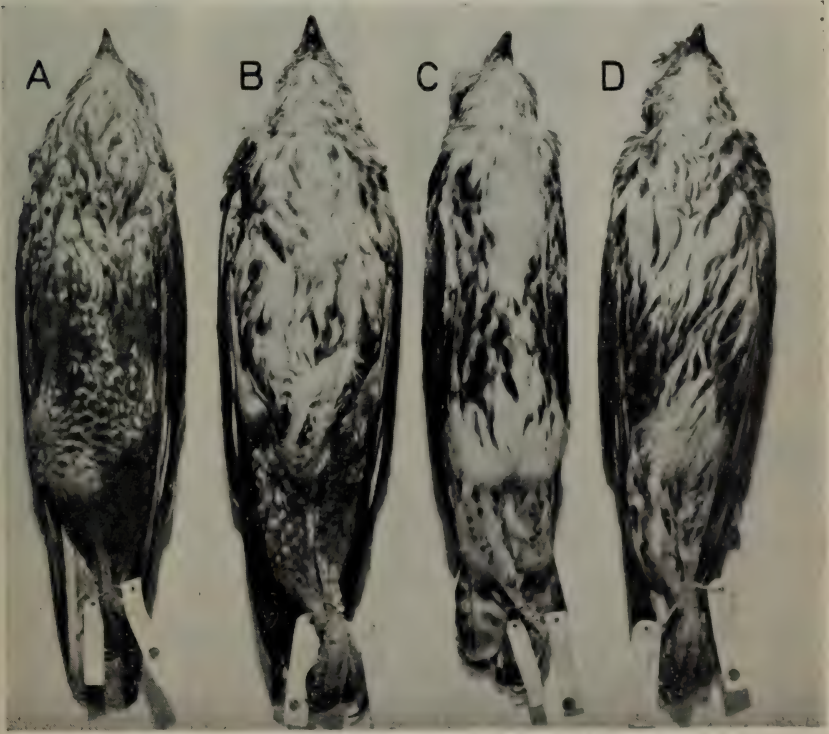


Plate 1. Ventral aspect of specimens of Buteos from Socotra.

TABLE 2. MEASUREMENTS IN MILLIMETRES OF BUZZARDS FROM SOCOTRA

Catalogue No.	*Wing*	*Tarsus*	*Culmen*	*Tail*
		Whole/Bare		
B.M.99.8.11.10	345	74/50	21.0	173
B.M.99.8.11.11	Underdeveloped	74/55	21.5	Underdeveloped
Liverpool 296	Underdeveloped	70/40.5	18.0	Underdeveloped
Liverpool 253	346	82.5/48.0	23.0	181
B.M.1934.8.12.2	365	78/56	26.0	Moulting
B.M.1934.8.12.3	345	86/57	22.0	189

feather edgings on the upper breast and upper thigh regions. The breast markings consist of a series of irregular dark brown streaks and blotches, occuring in greatest concentration on the flanks and sides of the lower breast. The abdomen is unmarked except for a few thin dark shaft streaks. The markings on the thighs vary from dark brown heart-shaped blotches on the fledgling bird, to broad elongated dark brown streaks on the older immature bird (Plate 1. C.D.)

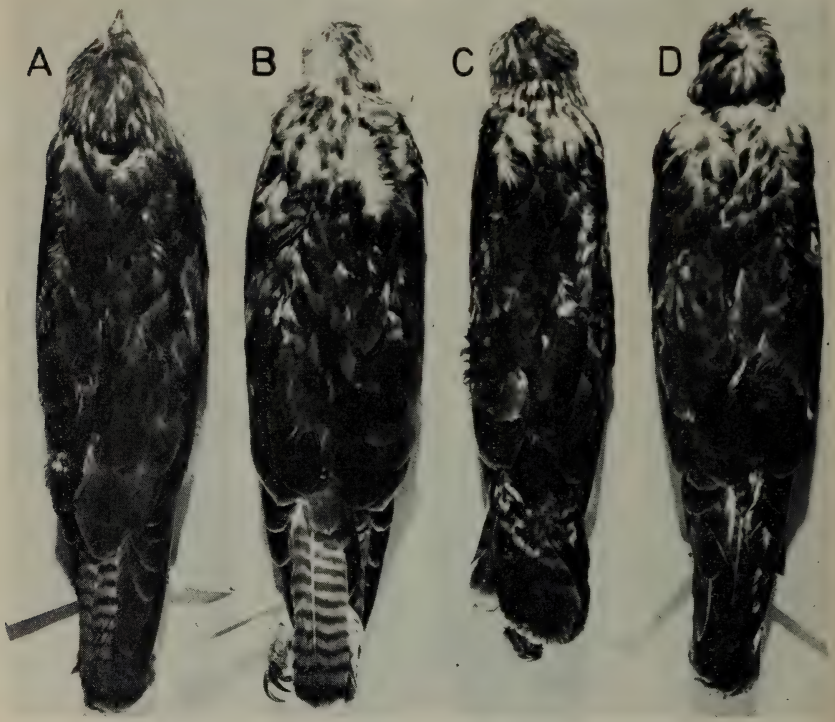


Plate 2. Dorsal aspect of specimens of Buteos from Socotra.

The underwing coverts are cream with irregularily placed dark brown feathers which are edged with chestnut buff.

Upperparts: The feathers of the upperparts are dark brown, with extensive rufous edging occurring on the feathers of the nape, neck, upperback and upperwing coverts. In the upper tail coverts the rufous occurs as transverse bars on the dark brown feathers. The edging of these feathers is either rufous or, in some cases, a dark cream buff. Cream buff edging also occurs on feathers of the nape and neck (Plate 2. C.D.).

Tail: The colour of the upper tail is dark brown transversed with darker brown/black bands. Unlike the other feathers of the upperparts, the tail feathers lack any rufous colouring.

Adults

Underparts: The breast colour is dirty white with rufous brown markings. In specimen A in Plate 1 the upper breast is streaked, the flanks and thighs are an almost uniform rufous brown, while the lower breast and abdomen are marked with horizontal bars of rufous brown. In specimen B the breast is pale and less marked with rufous brown. The upper and lower breast regions are irregularily streaked with rufous brown and the flanks are not as extensively coloured as in specimen A. The abdominal feathers are horizontally barred while the thighs are almost uniform rufous brown with extensive white speckling. The buff colour found in the two juvenile birds is confined in both adult birds to a few feathers on the upper breast, and in specimen B to the upper thigh regions also. The underwing coverts are pale with dark brown streaks edged sparingly with rufous. This colouring is more extensive in specimen A.

Upperparts: The feathers of the back are the same colour as in the juvenile birds but the rufous edging to the feathers is restricted to the upper back and less extensively to the upperwing coverts. The upper tail coverts are only slightly barred with rufous and are edged broadly with the same colour.

Tail: The tail of specimen A is greyish brown traversed with dark brown bands, the subterminal band being broader than the more proximal bands. A little rufous wash occurs in the tail feathers. In general the old tail feathers of specimen B, the tail of which is in moult, are similar in colour and pattern to those of specimen A, which shows no moult. However, the new tail feathers, which are only half unsheathed, are dark brown as opposed to grey brown of the old feathers. It appears that these feathers may pale to grey-brown only after they are fully developed.

Finally, a correction must be made to the paper by Ripley & Bond (1966), in which they mention an adult male specimen collected on September 3rd, 1934. In fact this specimen (B.M. 1934.8.12.2) was collected on 9th March, 1934. The mistake has apparently arisen out of the different shorthand notations for these dates. The notation 9.3.34 would be interpreted in America as Sept. 3. 34, placing the month before the date.

REMARKS ON THE LIVERPOOL MUSEUM MATERIAL

The following remarks are based on black and white photographs supplied by the Liverpool Museum. The fledgling bird is almost identical to the fledgling (B.M. 99.8.11.11) housed in the British Museum, from which it differs only in that the thighs are slightly more spotted.

According to Wagstaffe (*in litt.* 1969), the immature specimen is not quite fully adult, as it has some juvenile feathers on the upper breast and a few on the upperparts. It is similar in pattern to B.M. 1934.8.12.2 but has slightly more barring on the lower breast and abdomen. The feather pattern of the upper breast is similar to that of B.M. 1934.8.12.3.

DISCUSSION

In a previous paper (Siegfried & Frost, in press) we have pointed out the essential differences between the African populations of *Buteo oreophilus* and the palaearctic migrant *B. b. vulpinus*. Briefly they are that *oroephilus* is characterised by having a white breast marked with a pattern of clearly defined, longitudinally directed tear-shaped spots in both immature and adult plumages. *B. b. vulpinus* on the other hand is characterised by having a longitudinal streaked breast pattern in the immature plumage, which is replaced in the adult with a pattern of horizontal bars. In addition it is a highly variable population showing a wide range of colour morphs including a strong tendency towards obscurance of the breast pattern due to saturation with various shades of brown, a condition which is almost entirely absent in both *B. o. oreophilus* and *B. o. trizonatus*.

Hall and Goodwin (in Benson & Irwin, 1963) believe that the Socotran Buzzard is closest to *oreophilus* in size and colour. Moreau (1966), however, considers that the most likely explanation for the occurrence of a resident Buteo on Socotra, and indeed of *oreophilus* in East Africa, is that an extension of the range of *B. b. vulpinus* into the tropics occurred during the glacial periods of the Pleistocene.

Ripley & Bond (1966) failed to make any racial allocation, and instead suggested that variations in the bill measurements may indicate the presence of northern migrants (*B. b. vulpinus*) in the series. In this respect Forbes-Watson who spent some time on Socotra wrote: "I agree that there may be resident and migrant (non-breeding) populations, but I saw no sign of migration, nor flocking such as one sees in *vulpinus* in East Africa, with soaring groups of 20 or more" (*in litt.* 1969).

Therefore because of the possibility of northern migrants in the series, a careful scrutiny needs to be made of all the specimens involved, before any attempt is made to define their racial affinities. One can, for obvious reasons, isolate the two fledgling birds as being undoubted residents of the island. The juvenile specimen B.M. 1934.8.12.3 is so clearly an older version of the two fledgling birds that it too is considered to be resident. Specimens 253 and B.M. 1934.8.12.2 are also similar in plumage. They are both mensurally different from *oreophilus* and *vulpinus* in having very long stout tarsi and heavy feet. Both have some horizontal barring in the lower breast region, while the streaking of the upper breast feathers is narrower than in *oreophilus* but broader than in *vulpinus*. They also have dark flanks, a feature shared with the two fledglings and the juvenile bird. Finally the dark brown upperparts, similar in colour to *oreophilus*, distinguish at least specimen 1934.8.12.2 from *vulpinus*, though these feathers are broadly edged with rufous, a condition which is not characteristic of *oreophilus*. One can conclude that the above two specimens also belong to the island race.

This leaves the last specimen 99.8.11.10, an unsexed adult. In many respects this is a tantalizing specimen. Characters such as the colour of the upperparts, the rufous edging to the back feathers, and the dark flanks would appear to secure its position with the other specimens. However, the tarsi are both smaller and lighter than in these specimens and there is also a difference in the culmen and tail measurements. Because of these mensural differences there is the possibility that this specimen could be *B. b. vulpinus*, and therefore it cannot be considered in the following discussion.

From the preceding remarks it appears that the island race is intermediate between *oreophilus* and *B. b. vulpinus*. The resemblance to *oreophilus* is most striking in the juvenile plumages where both have buff edgings to the feathers of the underparts, together with pale thighs and tear-shaped breast spots, though in the Socotran Buzzard these spots are narrower than in *oreophilus*.

There is also similarity in the colour of the upperparts, but as stated earlier, the broad rufous edging is not characteristic of *oreophilus*.

In the adult plumage the presence of horizontal barring of the lower breast and abdominal feathers is also uncharacteristic of *oreophilus* and is similar to the patterns found in *vulpinus*. It has been argued elsewhere (Siegfried & Frost, in press; Siegfried, in press) that this horizontal barring in the adult is a basic difference between *B. oreophilus* amd *B. b. vulpinus*.

On this basis the Socotran Buzzard would appear to be closer to *vulpinus* than to *oreophilus*. This view is supported by a number of other observations. The tail bands, for instance, are narrower than in *oreophilus* and appear similar to those of *vulpinus*. The breast markings are not as clear cut and as well spaced as in *oreophilus*. There is a tendency for these markings to merge, for example in the dark thighs of the adult. Forbes-Watson (*in litt.* 1969) mentions a bird seen near Kishin which was very dark in colour and almost uniform below, while some of the colour slides show another different bird in which there is considerable merging of the underbody markings.

Hall and Goodwin (in Benson & Irwin, 1963) have drawn attention to the "heavier legs" of Socotra birds than of *B. b. vulpinus*. In the two immature birds and the adult the tarsi are heavier even than in *oreophilus*. In this respect it is interesting to note that in at least one other island Buteo (*B. brachypterus* in Madagascar, pers. obs.) there is a tendency towards heavy tarsi and large feet. This condition, together with that of a large culmen, is probably adaptive to an island existence (vide Grant 1965; Schoener 1965, 1969).

The Socotran Buzzard therefore would appear to be a form intermediate between *B. buteo* of the Palaearctic and *B. oreophilus* of Africa, with closer affinities to the former than to the later, and as such may be considered a separate race of *B. buteo*. However, we have deliberately refrained from naming this race because we consider that a single adult specimen of a bird so closely related to *B. buteo*, which is well known for the plumage variability of its widespread populations, is insufficient material on which to base a formal description of the race. As mentioned earlier, notes supplied by Forbes-Watson (*in litt.* 1969) indicate that the population of the Socotran Buzzard is more variable in its plumage, than the series just described would seem to indicate.

ACKNOWLEDGMENTS

We wish to express our appreciation to Mrs. B. P. Hall, and Messrs. I. C. J. Galbraith and P. R. Colston of the British Museum (Natural History), for assisting one of us (P.G.H.F.) in locating specimens. In addition we thank Mr. R. Wagstaffe for kindly supplying data on the two specimens in the Liverpool Museum. We are also grateful to the photographic departments of the two museums for providing photographs of specimens, and to Mr. A. D. Forbes-Watson, of the National Museum, Nairobi, for lending us his slides and for supplying certain field notes.

References:

Benson, C. W. & Irwin, M. P. Stuart, 1963. Some comments on the Atlas of European Birds from the Ethiopian aspect. *Ardea* 51 (2): 212–229.

Forbes, H. O. 1903. 3 (Ed.) *The Natural History of Sokotra and Abd-el-Kuri*. Free Public Museums, Liverpool.

Grant, P. R. 1965. The adaptive significance of some size trends in island birds. *Evolution* 19 (3): 355–367.

Moreau, R. E. 1966. *The Bird Faunas of Africa and its Islands*. Academic Press, London.

Ripley, S. D. & Bond, G. M. 1966. The birds of Socotra and Abd-el-Kuri. *Smithsonian Misc. Coll.* 151 (7): 1–37.

Schoener, T. W. 1965. The evolution of bill size differences among sympatric and congeneric species of birds. *Evolution* 19 (2): 189–213.

Schoener, T. W. 1969. Models of optimum size for solitary predators. *Amer. Natur.* 103: 277–313.
Siegfried, W. R. (in press). Affinities of the small African and Palaearctic Buteos. *Proc. Third Pan-Afr. Orn. Congr., Ostrich Suppl.*
Siegfried, W. R. & Frost, P. G. H. (in press). Systematic notes on the small African Buteos. *Ardea.*

[In 1900 Forbes gave the University Museum of Zoology, Cambridge, some 30 land birds collected by Ogilvie-Grant and himself on Socotra. But a careful search has not revealed any buzzard.—Ed.]

Some non-passerine bird weights from East Africa

by P. L. Britton

Received 4th April, 1970

Britton and Dowsett (1969) and Brooke (1969) together provide a full bibliography of African weight data, save for Liversidge (1968). Published data from collected birds are available for Tanzania and Uganda, but none are available for Kenya.

This paper lists 1004 weights of 223 species. The majority are from Kenya but 82 are from Tanzania and 52 from Uganda. A small series from the Omo River, southern Ethiopia (E) in June is included. Most of these weights are of specimens in the National Museum, Nairobi (to 31st July, 1969), but 220 are from the ringing schedules of the East Africa Natural History Society (to 30th June, 1969). Apart from two recent specimens, diurnal raptors in the National Museum have been ignored as their weights are included by Brown and Amadon (1968). Wintering palearctic birds are excluded, but I have deposited a list of 132 weights of 47 palearctic species (including passerines) from the National Museum collection with the B.T.O., Tring, England. I have recently ringed and weighed a large number of birds in western Kenya, but none of these data are included as I am improving my series of most species and intend to publish them at a more appropriate time.

As the weights listed were obtained by many workers, and their methods are in many cases unknown, there is a likelihood of some error. I have, therefore, omitted a few impossibly heavy or light birds, but have otherwise presented the data as they were found.

If all data for a species are from one locality it is mentioned, but it would be too complicated to mention localities in other cases. Similarly, dates are included for only a few species. Age is not mentioned except for birds in immature plumage (imm.) and juveniles (juv.), and wing-lengths (in mm) are given only for juveniles. Females with considerably enlarged ovaries are considered separately and are marked as breeding (♀ b.). Figures in parenthesis after extremes are averages, and standard deviations are included here when samples are sufficiently large. All weights are in grammes. Order and nomenclature follow White (1965).

Podiceps ruficollis: ♂♂ 185, 205; ♀ 150; ♀♀ b. 165, 170, 175; ♂ imm. 160; L. Naivasha.
P. cristatus: ♂ 960; ♀ 910; ♀ b. 920; ♀ juv. 670, wing 165; L. Naivasha.
Pelecanus onocrotalus: ♂♂ 11800, 12550; o 12300; L. Naivasha.
Phalacrocorax carbo: ♀♀ 1590, 1820, 1820, 1930; L. Naivasha.
P. africanus: ♂ 440, L. Naivasha, Dec.
Anhinga rufa: ♂ 1050; ♀ b. 1130.
Ixobrychus minutus payesii: ♂ 71, L. Naivasha, Jan.
I. sturmii: ♂ imm. 142, Nairobi, May.
Ardeola ibis: ♂♂ 340, 370; ♀ b. 340; o 290.
Butorides striatus: ♀ 235.
Egretta alba: ♂ 1110, L. Baringo, August.

Ardea melanocephala: ♂♂ 820, 935, 1420, 1650; ♀ 710; ♂ imm. 850.
A. goliath: ♂ 4310, L. Baringo, August.
A. purpurea: 880, L. Baringo.
Scopus umbretta: ♀ 425, Nairobi, April.
Ciconia episcopus: ♀ 1590, Tanga, April.
Leptoptilos crumeniferus: ♀♀ 4820, 6700; March.
Ibis ibis: ♀♀ 1190, 2325.
Threskiornis aethiopica: ♂ 1530, S. Kinangop, April.
Platalea alba: ♀ 1790.
Phoenicopterus ruber: ♀♀ imm. 1990, 2160; L. Elementeita, Feb.
P. minor: ♀ 1650; ♀ b. 1930.
Dendrocygna bicolor: ♀ 840, very fat, Dec.
Plectropterus gambensis: ♂ 6015, L. Naivasha, Oct.
Sarkidiornis melanota: ♂♂ 1445, 1900; ♂ 2nd year, moult, 1615; L. Naivasha.
Nettapus auritus: ♂ 290; ♂ imm. 225; ♀ imm. 220.
Anas sparsa: ♀ 760; ♀ b. 960; March.
A. capensis: 24, 382–505 (418.7 ± 35.0); L. Nakuru.
A. undulata: 560, 760, 850; April.
A. erythrorhynchos: ♂ 440; ♀ b. 400.
A. hottentota: 32, 210–315 (251.8 ± 18.9); L. Nakuru.
Oxyura maccoa: ♂ 820, L. Nakuru.
Thalassornis leuconotus: ♂♂ 650, 710, 790; ♀♀ 650, 680, 765; ♀ b. 625; L. Naivasha.
Accipiter tachiro: ♂ 230, Amani, July.
Aquila rapax: ♀ 2150, Mtito Andei, April.
Falco biarmicus: ♂ 402; ♀ 723; Nairobi.
Francolinus coqui: ♂♂ 290, 300; ♂ fairly fat 305; ♀ b. 340.
F. sephaena: ♂♂ 205, 310; ♀ 220; ♀ b. 240; o 290 (E).
F. psilolaemus: ♀ b. 510, Mt. Kenya, June.
F. leucoscepus: ♀♀ 400, 425; Isiolo, April.
F. squamatus: ♀ 420, Mt. Kilimanjaro, Feb.
Coturnix delegorguei: ♂♂ 72.3, 73.9, 81; ♀♀ 73, 76, 78, 91.5; ♀♀ b. 73, 94.7.
Ptilopachus petrosus: ♂♂ 190, 190; Karamoja.
Numida meleagris: ♂♂ 1625, 1650, 1675.
Acryllium vulturinum: ♂ 1645; ♀ 1135; juv. 625, wing 218.
Rallus caerulescens: ♀ 80, Kikuyu, Dec.
Limnocorax flavirostra: ♂ 94; ♀ 75; ♀ b. 79.
Gallinula chloropus: ♂ 370; ♀ imm. 250; L. Naivasha.
Porphyrio porphyrio: ♂♂ 570, 680; ♀♀ 480, 510; ♀ b. 600.
Fulica cristata: 10 ♂♂, 770–910 (827 ± 46.7); 10 ♀♀, 455–790 (635 ± 107); L. Naivasha. ♂♂ heavier than ♀♀ ($P < 0.001$, t—test).
Balearica pavonina: ♀♀ 3575, 3970.
Eupodotis melanogaster: ♂ 1020, Nakuru, Dec.
E. hartlaubii: ♀ 1190, Machakos, August.
Actophilornis africana: ♂♂ 115, 125, 135; ♀ b. 255; L. Naivasha.
Dromas ardeola: ♂♂ imm. 248, 275; ♀ 325; Mida Creek, near Malindi, April.
Burhinus capensis: ♂♂ 400, 425; ♀ 413; ♀ 450 (E).
B. vermiculatus: ♀ 320, Tanga, March.
Vanellus crassirostris: ♂ 170; ♀ 170; Karamoja.
V. armatus: 47, 138–197 (163.7 ± 11.1); L. Nakuru/L. Naivasha.
V. spinosus: 6, 127–159 (148); L. Nakuru/L. Naivasha.
V. tectus: ♀ b. 100, Tana River (600 m a.s.l.), May.
V. lugubris: ♀ b. 100, Kilifi, April.
V. melanopterus: ♂♂ 163, 170; ♀ 170.
V. coronatus: ♂♂ 156, 175; ♀♀ 170, 200; ♂ imm. 150.
V. senegallus: ♂ 220, Masindi, March.
Charadrius pecuarius: 6 imm., 30–35 (32.3); 46, 26–36 (31.4 ± 2.1); mainly L. Nakuru.
C. tricollaris: ♂♂ 28, 28, 32; ♀♀ 32, 32; ♀ b. 32; imm. 31; 8, 30–34 (31.4).
C. marginatus: ♀♀ 29, 29, 31; Tanga, March/April.
C. pallidus: ♂♂ 27, 27, 29, 29.5; 5 ♀♀, 22–27 (24.8); L. Magadi.
Gallinago nigripennis: 22, 93–164 (114 ± 19.4); L. Naivasha.
Himantopus himantopus: ♂ 175; ♀ 160; o 143.
Recurvirostra avosetta: ♂ 285; ♀ 270; 5 o, 225–305 (266).
Rostratula benghalensis: ♂ 120, Feb; ♀♀ 124 (Feb.), 135 (Nov.), 140.
Cursorius cursor: ♂ 93; ♀ 107; juv. ♂ 74.5, wing 132.
C. temminckii: ♂♂ 64, 65; ♀ 70; ♀ b. 71; juv. 53, wing 117.
C. cinctus: ♂ 125, Archer's Post, August.

Glareola pratincola: ♂ 74; ♀ 73; L. Magadi.

Larus hemprichii: ♂ 510; ♀ b. 400; Kilifi, April.

L. cirrhocephalus: ♂ 325; ♀ imm. 320; imm. 255, 325, 355; o 320, 350.

Sterna benghalensis: ♂♂ 185, 190; ♀♀ 205, 235; Kilifi, April.

Pterocles exustus: ♂ 200; ♀ 175; ♀♀ b. 170, 200; Aug./Sept.

P. decoratus: ♂♂ 175, 210; ♀♀ 167, 200; Kibwezi.

P. gutturalis: ♂♂ 340, 345, 345; ♀♀ 285, 320, 340; ♀♀ b. 290, 380, 400; Athi Plains, August.

Turnix sylvatica: ♀ 39; ♀♀ b. 49.6, 53.

Ortyxelos meiffrenii: ♂♂ 15.7, 19.5; Voi, April.

Columba arquatrix: ♂ 370, Limuru, Jan.

C. albinucha: ♀ b. 325, July.

C. delegorguei: ♀♀ b. 133, 142 (fat); Kakamega Forest, Dec.

Streptopelia lugens: ♂ 140; ♀ 170; ♀ b. 175; ♂ imm. 140.

S. semitorquata: ♂ 200; ♀ 178; 6 ♀♀ b., 166–200 (184.5); ♀♀ imm. 145, 145, 172.

S. decipiens: ♂♂ 125, 140, 140; ♀ 125; ♀ b. 140.

S. vinacea: ♂♂ 109, 111, 117, 120; ♀ 85; ♀ b. 103; Masindi.

S. capicola: ♂♂ 123.6, 125, 149; ♀ b. 120; o 128.

S. senegalensis: ♂♂ 76.2, 92.4, 94; ♀ 80; ♀ b. 80.

Oena capensis: 6 ♂♂, 33–42 (37.7); 5 ♀♀, 32.5–39 (34.4); ♀♀ b. 35, 38; ♀ imm. 35.

Turtur tympanistria: 7 ♂♂ ,63.6–68.6 (66.3); ♀ 62.4– ♀ b. 60.2.

T. afer: ♂ 68.8, near Sare, South Nyanza, May.

T. chalcospilos: ♂♂ 55.7, 63; ♀♀ 52.5, 54.

Aplopelia larvata: ♂♂ 81.7, 140; ♀♀ imm. 105, 140; imm. 124.9.

Treron australis: ♂ 240; ♀♀ 180, 235, 236; ♀ b. 240.

Poicephalus cryptoxanthus: ♂ 114.3, Sokoke Forest, May.

P. meyeri: ♂ 165, Serengeti, Dec.

P. rufiventris: ♂ 120, Kibwezi, Dec.

Agapornis fischeri: ♂♂ 43, 49.

Tauraco schutti: ♂ 233; ♀ 238.

T. livingstonii: ♀ 249, Migori, South Nyanza, May.

T. fischeri: ♂♂ 255, 261; ♀♀ 247, 283; ♀♀ b. 227, 259.

T. hartlaubi: ♂♂ 200, 225, 227, 255; ♀♀ 205, 235; ♀ b. 220.

T. porphyreolophus: ♀ b. 280, Yatta, near Kibwezi, March.

Corythaixoides personata: ♂♂ 280, 300.

Crinifer zonurus: ♀ 584; ♀ b. 480; o 450.

Corythaeola cristata: ♂ 1040; ♀ 941.

Clamator jacobinus: ♂♂ 70, 71; ♀♀ 80 (E), 82.2, 84 (E); ♂ imm. 62; ♀ imm. 50.5.

C. levaillantii: ♂ 119, Nairobi, Feb; ♂ 140, Bungoma, August.

Cuculus solitarius: ♀ b. 71; juv. ♂ 52, wing 159; Nairobi.

C. clamosus: ♂ 85.1, April; ♀ (large egg in oviduct) 79, May; ♂ imm. 49, Oct.

C. canorus gularis: ♂ 100, Kapenguria, March.

Cercococcyx mechowi: ♂ 50, Aug.; ♀ (soft egg in oviduct) 55, Sept.; Budongo Forest.

Chrysococcyx klaas: ♂♂ 19.9, 22, March; imm. 25.6; juv. 15, wing 71; o 18, April.

C. caprius: 5 ♂♂, 27–29 (28.2); ♀ 35; ♀ b. 31; imm. 38.

Ceuthmochares aereus: ♀ 53, Masindi, Sept.; ♀ 75, Kakamega, March.

Centropus toulou: ♂ 94, Queen Elizabeth Park, Jan; ♂ imm. 125, Kisumu, June.

C. monachus: ♀♀ 225, 240.

C. superciliosus: ♂♂ 135, 155.2; ♀♀ 135, 170; ♀ b. 165.

Tyto alba: ♂♂ 300, 320; ♀ 275; Nairobi.

Bubo capensis: ♂ 1220; ♀ 1450.

B. africanus: ♀♀ 730, 820.

B. lacteus: ♂ 1615, Nairobi, Sept.

Glaucidium perlatum: ♂♂ 73 (E), 85; ♀ 85.

Asio capensis: ♂ 340; ♀♀ 305, 340, 345.

Caprimulgus fraenatus: ♂ very fat 71.2, Nairobi, April; ♀ 46, Tanga, Feb.

C. poliocephalus: ♂ 45; ♀♀ 48, 49; ♀ b. 49; July-October.

C. natalensis: ♀ 65, Angata Baragoi, WSW of Narok, Feb.

C. inornatus: ♂♂ March 46, 60; ♂ b. Olorgesailie, April, extremely fat, 61.4; ♀ 54, April.

C. stellatus: ♂ imm. 41, Kongelai, near Kapenguria, July.

C. tristigma: ♀ 87, Moroto, Nov.

C. fossii: ♂♂ 41, 41; ♂ very fat, April, 67.6; ♀♀ 35.4, 49.5 (May); ♂ imm. 41; ♀ imm. April, 48; all undated birds are July/August.

C. climacurus: ♂ 38.3, March; o 45, Nov.; Uganda.

Macrodypteryx longipennis: ♂ 32, Masindi, March.

M. vexillarius: ♂, fully developed pennants, 10 Sept., 90; ♂, no pennants, 11 April, 39; Masindi; both collected by A. C. Brooks.

[*to be continued*]

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be listed at the end of a contribution, in the same format as in the notice to contributors to the *Ibis* (see any 1969 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

Contributors are entitled to a maximum of ten free copies of the number of the *Bulletin* in which their contribution appears, provided that it exceeds one page of the *Bulletin*. Extra copies at cost price can be ordered through the Editor at the time of submission of the manuscript.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s*. for years up to 1968 (Vol. 88) and 7*s*. 6*d*. for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in advance) or per copy 7*s*. 6*d*., payable to the Hon. Treasurer, P. Tate, 4 Broad Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.

5 71

Bulletin of the

British Ornithologists' Club

C

R

Edited by

C. W. BENSON

Volume 90 No. 6 December 1970

Committee

Dr. J. F. Monk (*Chairman*)

Sir Hugh Elliott, Bt., O.B.E. (*Vice-Chairman*)

C. W. Benson, O.B.E. (*Editor*)

Mrs. J. D. Bradley

D. R. Calder (*Secretary*)

P. F. R. Jackson

R. E. F. Peal

P. Tate (*Treasurer*)

P. L. Wayre

Dates of meetings to be held during 1971

19th January. Speaker: Dr. D. W. Snow. Subject: To be decided. Venue: The Criterion in Piccadilly, W.1.

16th March. Speaker: To be decided. Venue: The Criterion in Piccadilly, W.1.

18th May. Speaker: Dr. C. H. Fry. Subject: African Ornithology by Hovercraft. Venue: The Criterion in Piccadilly, W.1.

Bulletin of the
BRITISH ORNITHOLOGISTS' CLUB

Vol. 90 No. 6 Published: 21st December, 1970

The six hundred and sixty-seventh meeting of the Club was held at the Criterion in Piccadilly, London, W.1 on Tuesday, 17th November, 1970, at 7 p.m.

Chairman: Dr. J. F. Monk; present: 10 members and 2 guests.

Mr. Murray Williams spoke to the Club about New Zealand Waterfowl Research and Conservation. His address was illustrated by photographic slides and was followed by a film about the waterfowl of Lake Ellesmere.

The meeting was preceded by a Special General Meeting of the Club.

Minutes of a Special General Meeting held at the Criterion in Piccadilly, London, W.1 on Tuesday, 17th November, 1970, at 6.30 p.m.

Chairman: Dr. J. F. Monk; present: 10 members.

The Chairman explained that the cost of printing the *Bulletin* has been increased twice during 1970 and that as the Club's finances for the year were expected to show a deficit on income-and-expenditure account without allowing for these increases, the Committee considered that there was no alternative to an increase in the amount of the subscription to be paid by members. Economies had been considered and some will be adopted but these are likely to make marginal savings only. The Chairman pointed out that at the last annual general meeting the Hon. Treasurer had warned members that an increase would have soon to be considered. The Committee had considered leaving the question until the annual general meeting in 1971, but this would have meant that no increase could take effect until 1972. The Committee did not consider that the Club's interests would be well served by allowing another larger deficit to be incurred next year. The Committee therefore proposed the resolution set out in the Notice of meeting as a resolution in terms of Rule (14) of the Club's Rules.

After a short discussion the resolution was agreed without dissent as follows:—

> "That with effect from 1st January, 1971, the annual subscription shall be £2 10*s*. and that Rule (4) shall be amended accordingly".

The meeting closed at 6.50 p.m.

A new species of *Melaenornis* (Muscicapinae) from Liberia

by A. D. Forbes-Watson

Received 29th October, 1970

This is the first in a series of papers on the ornithological results of the survey initiated by the IUCN Nimba Research Committee on the ecology of the Mt. Nimba area in Liberia, West Africa.

In lowland forest at the foot of the mountain specimens were collected of a flycatcher sufficiently distinct from its congeners to be described as a new species. I take great pleasure in naming it after my wife:

Melaenornis annamarulae sp. nov.

Type: Deposited in the British Museum (Natural History) No. 1969–25–1; adult ♂; Grassfield, Mt. Nimba, Liberia (7° 30′ N, 8° 35′ W); altitude *c.* 550 metres a.s.l.; 12th August 1967; collector A. D. Forbes-Watson; collector's No. FWNB 716.

Measurements of Type: Wing (flattened) 108 mm.; tail 79.5; culmen (to base) 16.5, (exposed) 14; tarsus 22; weight 41.9 gm.

Colours of soft parts of Type: Iris dark brown; rim of eyelid black; bill black; feet black, soles dull creamy.

Description: A large robust flycatcher, very uniform in colour. It is bluer than other *Melaenornis* spp., and it differs from them significantly in structural details and in its ecology.

The upperparts are uniform "blackish plumbeous" (Ridgway's *Color Standards and Color Nomenclature*, Washington 1912: Plate LII). The underparts, including underwing coverts, are uniform "slate grey" (*ibid.* Plate LIII); the throat is the same but appears slightly paler due to a slight disintegration of the feather barbs. The lores are slightly dusky. The rectrices and remiges are blackish washed with "blackish plumbeous" on the outer webs.

The tail is very slightly rounded, the difference between the longest and shortest retrices being *c.* 4 mm. The rictal bristles are fairly well-developed but not very strong, similar to those of other *Melaenornis* spp. The bill is strong and slightly hooked at the tip, and is stubbier and heavier-looking than those of the other species. The feet and toes are fairly strong, as in the others. Compared with the other species the tail is proportionately shorter.

A coloured plate of this bird by Cmdr. A. M. Hughes will be published in the final report on the birds of Nimba (Forbes-Watson in prep.).

Other material: 10 further specimens (six adult ♂♂ and four adult ♀♀) were collected in the same locality by Forbes-Watson in 1968; these are here designated paratypes. In all particulars they agree exactly with the (holo-) type. The sexes are alike. The following table gives details of all the specimens—measurements are in mm. and weights in gm:

Coll. no.	*Date*	*Sex*	*Wing*	*Tail*	*Culmen*	*Tarsus*	*Weight*
Holotype	1967						
FWNB 716	12 Aug	♂	108	79.5	16.5	22	41.9
Paratypes	1968						
FWNB 1260	24 Jan	♂	109	78.0	17.0	23	37.4
1261	24 Jan	♀	102	77.0	17.0	24	37.0
1262	24 Jan	♀	104	77.0	17.0	22	37.2
1850	11 June	♂	107	77.5	17.0	22	38.0
2020	31 July	♀	104	76.0	17.0	21	42.3
2045	6 Aug	♂	101	77.0	17.5	23	40.0
2050	7 Aug	♂	105	76.5	17.0	23	40.4
2051	7 Aug	♀	102	81.0	17.0	24	42.3
2303	2 Oct	♂	106	81.0	19.5	23	40.3
2311	4 Oct	♂	103	80.0	18.0	23	42.0

Range of measurements (seven ♂♂, four ♀♀):
wing ♂♂ 101–109 (av. 106); ♀♀ 102–104 (103)
tail ♂♂ 76.5–81 (78); ♀♀ 76–81 (78)
culmen ♂♀ 16.5–19.5; tarsus ♂♀ 21–24
weight ♂♂ 37.4–42.0 (40.0); ♀♀ 37.0–42.3 (39.7)
wing/tail ♂♂ 1.29–1.40 (1.35); ♀♀ 1.26–1.37 (1.33)

The wing/tail ratio for *Melaenornis* spp. (*sensu stricto*) and the two "*Fraseria*" spp. are *M. annamarulae* seven ♂♂ four ♀♀ 1.34, *M. ardesiaca* ♀ 1.11, *M. edolioides* three ♂♂ three ♀♀ 1.13, *M. pammelaina* seven ♂♂ three ♀♀ 1.20, "*F.*" *cinerascens* ♂ two ♀♀ 1.21, "*F.*" *ocreata* 10 ♂♂ six ♀♀ 1.22.

Habitat: All those collected and about 20 others seen were invariably in primary lowland forest at the foot of Mt. Nimba, and were never observed on the slopes, even though this is similar forest. They were definitely birds of the interior of the forest and were never seen near the forest edge.

Voice and Habits: Although usually silent, they would at times utter rather strident loud calls reminiscent of those other members of the genus, and not at all unlike certain calls of *Fraseria ocreata* and drongos *Dicrurus* spp.

They frequented the highest parts of the trees and were often seen perching conspicuously above the closed canopy; at other times they were seen foraging and moving through the tree-tops just below the canopy. At no time were they seen below *c.* 20 metres from the ground, and they were more usually above 30 metres.

Sometimes seen in pairs, they were more often in groups of four to six (like *F. ocreata* and unlike other species of *Melaenornis*, *sensu stricto*). They might remain in one general vicinity for long periods and, like other forest species, they could often be found in a circumscribed locality for several days in succession. They were not very active and the groups would move slowly through the tree-tops, feeding as they went. Fairly long inactive periods would be spent when they were very easily overlooked.

In a good light they would appear bluish-grey, but more often would be silhouetted against the sky when they could easily be mistaken for *Dicrurus ludwigii*. It is suggested that this species may well have been overlooked elsewhere due to the similarity between the species.

Definite indications of breeding were obtained from an examination of the gonads of the four females collected. In both those collected on 24th January (i.e. at the driest season) they were quiescent; that of 7th August had an ovary measuring *c.* 8 mm. long but without evident enlargement of the ova; that of 31st July had an ovary which measured *c.* 10 mm. and had ova up to *c.* 1 mm. diameter. This indicates nesting at the wettest time of the year. Nothing, however, was discovered about their nesting habits.

Food seemed mostly to be caught on short aerial flights, but occasionally birds were seen apparently inspecting crevices and moss on the main limbs of large forest trees. Examination of the stomach contents confirm these observations. All except one contained largish black flying hymenoptera; small black beetles were noted twice; small metallic beetles and a naked green caterpillar were noted once each.

Remarks: It is extremely unlikely that this species occurs only near Mt. Nimba; it will probably be found elsewhere in Upper Guinea, and could possibly extend to Lower Guinea. Ornithologists in forested West Africa are urged to examine carefully any "*Dicrurus ludwigii*" they see to ensure that it really is that species.

Recent revisions of this group of flycatchers (i.e. Vaurie 1953, White 1963, Hall & Moreau 1970 and Traylor 1970) include various combinations of genera within *Melaenornis*. Traylor's is the latest and includes *Dioptrornis*, *Bradornis*, *Empidornis* and *Sigelus*. Vaurie commented on the close relationship to *Fraseria*, but retained this genus because of differences in ecology (lowland forest *v.* montane forest edges, woodland and thorn savannah) and habits (feeds less on ground and occurs in groups); the only real external difference is the scaly breast. With the discovery of *M. annamarulae* these reasons are no longer valid. In the field it reminded me strongly of *F. ocreata* in habits and in calls, and was even more arboreal. It could equally be placed in either genus, only lacking the scaly breast of *Fraseria*. It therefore seems unnecessary to retain *Fraseria*, and I propose that the two species at present assigned to it should be included in *Melaenornis*, which would now contain 13 species.

On present knowledge *M. annamarulae* would appear to have no particularly close relatives within the genus. It is tempting to link it with *M. ardesiaca* of the Congo/Uganda borders, which approaches it most closely in colour. That species, however, has a yellow (not brown) eye and differs in structural characters; more important, it is a forest edge form which occupies a lower stratum (Chapin 1953, A. Prigogine *pers. comm.*). Also, being a montane (not lowland) form remote from *M. annamarulae* a close relationship is unlikely on zoogeographic grounds. Indeed, as has been shown, *M. annamarulae* seems to be a connecting link between species hitherto considered to belong to different genera.

Acknowledgments: I would like to thank the Chairman and Members of the IUCN Nimba Research Committee and the staff of the Nimba Research Laboratory, the Director and Trustees of the National Museums of Kenya, the staff of the Bird Room of the British Museum (Natural History), and in particular Mrs. B. P. Hall and C. W. Benson who examined these flycatchers with me. Without the active support of the LAMCO J. V. Op. Co. none of the work of the Nimba Research Committee would have been possible.

References:

Chapin, J. P. 1953. The Birds of the Belgian Congo. Part III. *Bull. Am. Mus. nat. Hist.* 75A: 617–618.

Hall, B. P. & Moreau, R. E. 1970. *An Atlas of Speciation in African Passerine Birds*, London. Maps 250–255.

Traylor, M. A. 1970. Notes on African Muscicapidae. *Ibis* 112: 395–397.

Vaurie, C. 1953. A generic revision of flycatchers of the tribe Muscicapini. *Bull. Am. Mus. nat. Hist.* 100(4): 459–538.

White, C. M. N. 1963. *A revised check list of African flycatchers* . . . etc. Lusaka: 14–21.

Observations on the nestlings of the Goliath Heron, *Ardea goliath*, in Rhodesia

by J. Cooper and B. E. Marshall

Received 30th July, 1970

The behaviour of several species of herons of the genus *Ardea* is fairly well documented in the literature. Meyerriecks (1960) discusses that of the Great Blue Heron, *A. herodias*, and Lowe (1954) and others consider the Common or Grey Heron, *A. cinerea*. North (1963) discusses the breeding behaviour of the Black-headed Heron, *A. melanocephala*. However, relatively little is available on the behaviour of young of this genus while still on the nest.

The Goliath Heron, *A. goliath*, is as its name suggests one of the largest species in the genus. In Rhodesia it is a breeding resident throughout much of the country where suitable conditions exist though is not as common as the other species (*A. cinerea*, *A. melanocephala* and *A. purpurea*) that occur.

The Goliath Heron breeds regularly on Lake McIlwaine, an artificial lake near Salisbury, Rhodesia, where several nests were observed during 1969. The following observations come from two that contained nestlings.

When newly hatched the young are covered in greyish-white down and the iris is light green; the tarsi, feet and general skin colour being a pale lime-green and the bill a pale green-brown. At this stage the difference in size between siblings is obvious (possibly due to incubation starting with the first egg laid and the subsequent staggered hatching). This size difference is shown by the following measurements taken on recently hatched downy young on 29th March, 1969:

Nestling 1	Culmen	19.5 mm.
	Tarsus	18.0 mm.
	Wing	16.5 mm.
Nestling 2	Culmen	24.5 mm.
	Tarsus	31.0 mm.
	Wing	28.0 mm.

At this stage the nestlings did not show fear to human intrusion, but only lifted their heads and emitted a continual hissing noise, probably a begging response.

At a different nest older young were observed. The history of it is shown as:

9th January, 1969	C/3
28th February, 1969	three well fledged young.
29th March, 1969	three young, one able to leave nest.
6th April, 1969	two young, both able to leave nest.

Assuming that laying was completed on the first visit (an unlikely event) and accepting the incubation period of 24–30 days given in McLachlan & Liversidge (1957), then the nestling period for two young was a minimum of 58 days, a substantially longer period than the "less than six weeks" mentioned in McLachlan & Liversidge (1957). Obviously further information is needed on this point.

The reaction of well-feathered young to human intrusion was very different to that of the younger ones previously described. On the 28th February, 1969 on our approach the birds were unable to stand, and all displays were given from a squatting position with partially raised breast. When faced with an intrusion the birds lifted up their heads, and raised the feathers of the

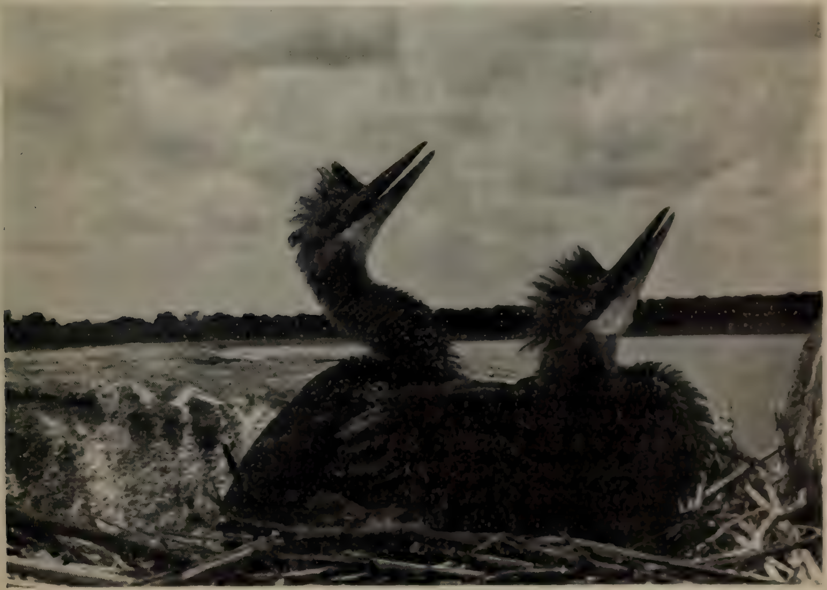


Plate 1. Forward Display: *A. goliath* nestlings.

crest and neck. The neck remained bent and the head was directed towards the intruder. In this position the wings were half spread and their upper surfaces turned towards the threat so that the apparent size of the bird was greatly increased. The bill was slightly open (Plate 1). This is the Forward Display of Meyerriecks (1960). The bulging eyes he described for *A. herodias* were noted in *A. goliath* and the now yellow irises and binocular vision lend an impressive effect to the display (Plate 2). In this position the bird with its puffed throat resembles *A. cinerea* in plate 4a of Lowe (1954).

Following the Forward Display the Full Forward Display of Meyerriecks (1960) was given. This consisted of sudden forward lunges that ended in an audible snap of the bill as the neck straightened and the breast lifted momentarily off the nest. The Full Forward Display was aimed at the intruder and represents a more aggressive state than that of the Forward Display. The nestling on the left of Plate 3 is straightening its neck in the Full Forward Display while the one on the right remains in the less aggressive Forward Display position.

The Full Forward Display usually terminates in a call in the adult *A. herodias* (Meyerriecks, 1960). However, Baerends & Van Der Cingel (1962) have shown that in the nestling *A. cinerea* a "snap display" is commoner than a "threat call", and they use the term "forward with snap" to describe this behaviour. *A. herodias* does occasionally give "ok" or "ark" calls with Forward and Full Forward Displays when in the nestling stage (Meyerriecks, 1962) as does *A. cinerea* (Baerends & Van Der Cingel, 1962) but the bill snap is more common. No calls were heard from the *A. goliath* nestlings during these displays.

In the nestling the two forward displays were usually directed upwards (see Plates) and not downwards as is usual in the adult. This is presumably because the display is directional and the intruder is usually above the level of the squatting young. What must be Full Forward Display is mentioned as occurring in the young of *A. goliath* by Benson & Serventy (1956) who also describe the plumage of the well-developed nestlings. Forward Display is described as occurring in the adult *A. melanocephala* by North (1963).

Not all the nestlings displayed in this manner. Although no size difference was observed one bird did not give forward displays and its head can just be seen in Plate 1, restricting itself to crest-raising only. Occasionally one of the birds scrambled to the far side of the nest and remained hunched up with sleeked feathers (the bird on the right in Plate 2). This is the Withdrawn Crouch of Meyerriecks (1960) and it appears to contain an important fear component not present in the two very different aggressive forward displays.

On two visits gular fluttering was observed. Meyerriecks (pers. comm.) considers this to be a heat-control mechanism and not necessarily part of any display. Although it continued during Forward Display it was also observed in the downy young on a hot cloudless day where previously a parent had been shielding them from the sun with half-open wings.

On later visits the nestlings could stand and leave the nest for the surrounding rock. At this stage the aggressive displays were not as easily elicited. This slackening off with increased mobility is mentioned by Baerends & Van Der Cingel (1962) for *A. cinerea*. Once young are able to leave the nest they can avoid intruders more successfully and this probably explains the reduction in display behaviour observed. One bird regurgitated during this avoidance procedure and another fell off the nest-rock into the lake and remained swimming nearby until rescued and replaced, in a water-logged condition.

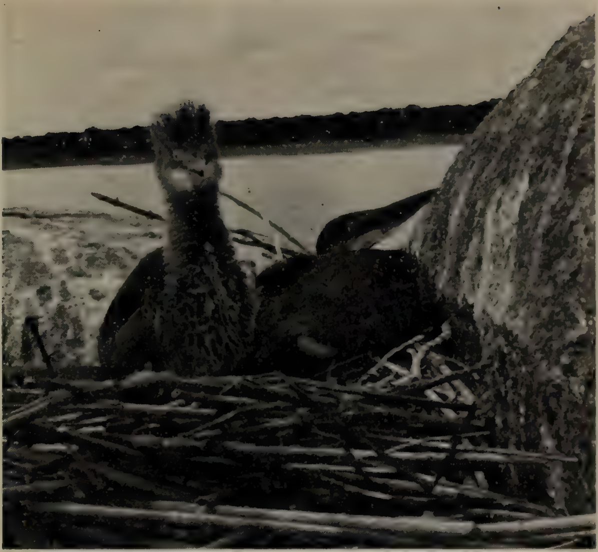


Plate 2. Forward Display and Withdrawn Crouch: *A goliath* nestlings.

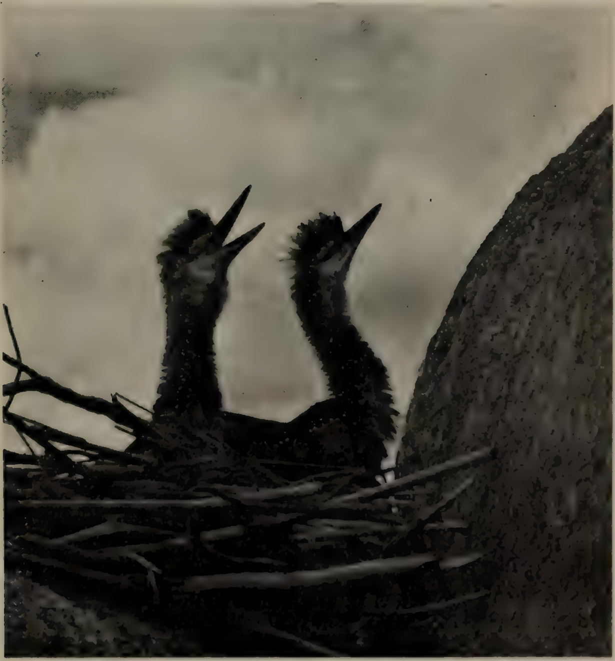


Plate 3. Full Forward and Forward Display: *A. goliath* nestlings.

Two aggressive displays and one fear display are described for the nestling of the Goliath Heron, *Ardea goliath*. They are similar to displays of the Common or Grey Heron, *A. cinerea*, and the Great Blue Heron, *A. herodias*.

Acknowledgments are due to Dr. A. J. Meyerriecks for help with references and for his useful comments. We are indebted to Mrs. E. L. Cooper (J.C's mother) for typing the script.

References:

Baerends, G. P. & Van Der Cingel, N. A. 1962. On the Phylogenetic Origin of the Snap Display in the Common Heron (*Ardea cinerea L.*). *Symp. Zool. Soc. Lond.* No. 8: 7–24.

Benson, C. W. & Serventy, D. L. 1956. Breeding Data from Katema Island, Northern Rhodesia. *Ostrich* 27: 171–172.

Lowe, F. A. 1954. *The Heron.* Collins New Naturalist Series. London.

McLachlan, G. R. & Liversidge R. 1957. *Roberts Birds of South Africa.* S.A. Bird Book Fund, Cape Town.

Meyerriecks, A. J. 1960. Comparative Breeding Behaviour of Four Species of North American Herons. *Publ. Nuttal Orn. Club No.* 2: 158 pp.

— 1962. *Handbook of North American Birds.* (Palmer, R. S. Ed.) Vol. I: 389. Yale University Press, New Haven.

North, M. E. W. 1963. Breeding of the Black-headed Herons at Nairobi, Kenya, 1958–62. *J. East Afr. Nat. Hist. Soc.* 44 (2): 33–63.

Some non-passerine bird weights from East Africa

by P. L. Britton

(Part II)

Received 4th April, 1970

Britton (1969) analysed 190 weights of this species from north-western Zambia where it is a breeding visitor from September to March. Both of the above weights are from its non-breeding range (Mackworth-Praed & Grant, 1952), and they are especially interesting as their dates are critical. The September bird was presumably about to migrate, and it is heavier than the maximum weight (88.0g) in Britton (*op. cit.*). In fact most males from Zambia weighed less than 70g and the only birds weighing over 82.5g were in March, prior to migration. The April bird is especially light (39g), the lightest bird in Britton (*op. cit.*) being 59.0g. It was possibly collected in an exhausted condition at the end of a lengthy migration, but there is nothing to suggest this on the collector's label.

Apus melba: ♀ 102; ♀ b. very fat, 103.
A. aequatorialis: ♂♂ 99, 100; ♀♀ 85, 93.3.
A. niansae: ♂ 31, Limuru, March.
A. barbatus: ♂ 41.5, Aberdares, March.
A. caffer: ♂♂ 20.5, 22, 22.1, 24; ♀ 22; ♀ b. 21; juv. ♀ 15, wing 113; o 21.0.
A. affinis: ♂♂ 24, 25; 7 ♀♀, 18.5–27 (23.3); ♀♀ b. 25, 25, 25, 27; ♂ imm. 27; juv. 23, wing 105; pullus ♂ 17.5, wing 67.
Cypsiurus parvus: ♂♂ 10.0, 12.0; 6 ♀♀ 10.5–13.0 (11.8); ♂ imm. 11.5.
Chaetura sabini: 16.0, Kakamega Forest, July.
C. ussheri: ♀ 30.6, W. Usambara, July.
Colius striatus: 7 ♂♂, 47–54 (51.9); 6 ♀♀, 48–55 (52.3); ♀ 41; o 52.
C. macrourus: ♂ 52.5; ♀♀ 40, 50; ♀ b. 51; ♂ imm. 36.
Apaloderma narina: ♀ 60.6; ♀ b. 65.5.
A. vittatum: ♂♂ 50, 56.7.
Ceryle maxima: ♀ 255, Usambara, Feb.
C. rudis: ♂ 81.5; o 73.
Alcedo semitorquata: ♂ 40.2; ♀ 35.0; Amani, *c.* 1000 m, July.

Benson (1964) recorded the very similar *A. semitorquata* and *A. quadribrachys guentheri* at the same locality in north-western Zambia, and showed that, in or near the area of overlap in their ranges, *semitorquata* has a longer wing-length than *quadribrachys*, but there is no appreciable difference in bill-length.

I can find no published weights of *semitorquata*, but Britton & Dowsett (1969) and Verheyen (1953) together give seven weights of *A. q. guentheri* from Zambia and the Congo, and Forbes-Watson (in prep.) gives the following weights of *A. q. quadribrachys* from

Liberia: ♂♂ 30.5, 31.9, 34.1, 36.3, 37.1; ♀♀ 36.9, 37.9. Nominate *quadribrachys* may be a little heavier than *A. q. guentheri* but I have nevertheless grouped the fourteen weights together: 28.5–37.9 (33.9 ± 2.9). It would clearly be of interest to compare a series of *semitorquata* weights with the above *quadribrachys* weights to determine whether the suggestion of a difference in weight, correlated with a difference in wing-length, is statistically significant.

A. cristata: ♂♂ 15, 16, 16; 10, 14.0–17.5 (15.8 ± 1.1); L. Naivasha.

Ceyx picta: ♂♂ 8.0, 11.0 (E), 13.0; 6 ♀♀ 8.0–14.0 (11.3); ♀ imm. 11.9; o 12.0.

C. lecontei: ♂♂ 8.0, 9.5.

Halcyon senegalensis: ♂ 64; ♀♀ 54, 67.

H. chelicuti: ♂♂ 31, 34, 38; o 41.4.

H. albiventris: ♂ 52.5; ♀ 62.4; July.

H. leucocephala: ♂♂ 33.5, 42, 45; ♀♀ 37, 40; juv. ♂ 26.0, wing 80; juv. ♀ 26.5, wing 74; the last two from same brood.

Merops s. superciliosus: ♂ 44, Seronera, Serengeti Plains, Sept.

M. albicollis: 6 ♂♂ ,Jan./Feb. 25–28 (26.2); ♂ Aug. 24; ♀ Feb. 26.

M. pusillus: 5 ♂♂, 13.0–15.9 (14.6); ♀♀ 13.0, 14.0; ♀♀ imm. 14.0, 14.0.

M. lafresnayii: 5 ♂♂, 25–29 (27.2).

M. bulocki bullockoides: 5 ♂♂, 34–38 (35.8); 8 ♀♀, 31–35 (33.6); ♀♀ b. 34, 34.5, 36; o 35, 35, 36, 36; L. Naivasha. ♂♂ heavier than ♀♀ ($P < 0.05$, *t*—test).

M. muelleri: ♂♂ 23.0, 23.4; ♀ 22.0; Kakamega Forest.

Coracias caudata: ♂♂ 87, 120, 125; ♀♀ b. 106, 113.

C. naevia: ♂ 200, L. Magadi, May.

Eurystomus glaucurus; ♂ 120, N. Tanzania, Nov; ♀ 98, Kilifi, Aug.

Upupa epops: ♂♂ 52, 59; ♀ 51; o 58 (E).

Phoeniculus purpureus: ♂♂ 63, 71; ♀ 63.

P. bollei: ♂♂ 47, 58, 64; ♀ 54.

P. minor: ♀♀ 21, 23; o 21.

Tockus nasutus: ♂ 252; ♀ imm. 175.

T. erythrorhynchus: ♀ 170, L. Magadi.

T. deckeni: ♂♂ 205, 212; ♀ 155; ♂ imm. 205.

T. hemprichii: ♀ b. 297, L. Baringo, March, extremely fat.

T. pallidirostris: ♀ 170, Oct.

T. alboterminatus: ♂ 285; ♀ 240; Njoro, near Nakuru.

Bucorvus cafer: ♀♀ 3200, 3915, 3950; ol Kalou, E of Nakuru, March.

Lybius bidentatus: ♂ 84.8; ♂ imm. 62; ♀ imm. 64.5; o 71 (E).

L. melanopterus: ♀ 53.8, Sokoke Forest, May.

L. leucocephalus: ♀ b. 57.6, June.

L. guifsobalito: ♂ 42, Murchison Falls, Nov.

L. melanocephalus: 5 ♂♂, 21.5–26 (22.7); 5 ♀♀ ,17.0–20.0 (18.2); o 19, 20, 26.

L. lacrymosus: 5 ♂♂, 21–27 (23.0); ♀♀ 25, 25.1.

L. leucomelas: ♂ 32.0; ♀♀ 22, 28, 32.5, 33.6.

Gymnobucco bonapartei: ♂ 65; ♀♀ 75, 81.

Buccanodon leucotis: ♂♂ 56, 58.6; ♀♀ 51.5, 56, 58.

B. olivaceum: ♂♂ 45.4, 47.5, 48, 50; 7 ♀♀, 43.1–51 (46.7); ♀ b. 47.1.

B. duchaillui: ♂♂ 40.4, 49; ♀♀ 40, 45, 46.

Pogoniulus scolopaceus: ♂ 18.0, Budongo Forest, May.

P. leucomystax: ♂♂ 10.5, 11.5; o 10.5.

P. simplex: ♂♂ 8.3, 8.6, 8.8; ♀ 10.0; Sokoke Forest.

P. pusillus: ♂♂ 10.0, 10.5, 12.5; ♀♀ 9.0, 9.0, 12.0.

P. chrysoconus: ♀ 12.0, Kisumu, May.

P. bilineatus: ♂ 10.0; ♀ 13.0; o 13.0.

Trachyphonus purpuratus: ♂ 85; ♀♀ 66, 78; ♀ b. 66.

T. darnaudii: 9 ♂♂, 27–38 (33.2); 8 ♀♀, 26–37 (32.4); ♀ imm. 31.5.

T. erythrocephalus: ♂♂ 51, 59.5; ♂ (bill deformed) 47; ♀ 66; o 54.5.

Indicator variegatus: ♂♂ 49.4, 49.8; ♀ 47; ♀ (large egg in oviduct) 52.5.

I. indicator: ♀ 51; imm. 53.

I. minor: ♀ 22.5; ♀♀ b. 24.0, 24.5; o 27.0, 29.0.

I. exilis: ♀♀ 17.0, 18.0; ♀ (large yolk in ovary) 17.6; Kakamega Forest.

I. meliphilus: ♂ 15.0, Moroto, Oct.

Prodotiscus insignis: ♀ 10.2; ♀ imm. 10.0.

Jynx ruficollis: ♂♂ 49, 52; ♀ 52.

Campethera nubica: 6 ♂♂, 46.5–66.6 (59.8); ♂ 60 (E); ♀♀ 57, 62, 64, 66; ♀ b. 62; o 46.7.

C. abingoni: ♂ 72.5; ♀ 74.

C. caillautii: ♂ 40; ♀♀ 40, 43, 43, 45.7.

C. caroli: ♂♂ 60, 62; ♀♀ 58, 59.

C. nivosa: ♂♂ 34, 35, 36; ♀ 35.
C. tullbergi: ♂ 52; ♀ 49.
Dendropicos fuscescens: 11 ♂♂ ,21–30 (26.1 ± 3.5); ♀♀ 22.8, 24, 25; ♀ b. 22.4.
D. poecilolaemus: ♂ 27.0, wing 85; ♀ 29.2, wing 87; pair, Ng'iya, Central Nyanza, May.
D. obsoletus: ♂ 23.5, Thika, June.
Mesopicos goertae: ♂♂ 46, 48, 53; ♀♀ 49, 51.3.
M. griseocephalus: ♂ 43.1, W. Usambara.
M. xantholophus: ♀♀ 51.5, 56; Kakamega Forest.
Thripias namaquus: ♂ 83, Dodoma, Dec.

I would like to thank A. D. Forbes-Watson, Ornithologist, National Museum, Nairobi for allowing me access to their collection and for his assistance with a variety of problems. I would also like to thank G. C. Backhurst, Elizabeth Blundell and Dr. E. D. Steele for allowing me to include data from the birds which they have ringed in Kenya.

References:
Benson, C. W. 1964. *Alcedo quadribrachys* and *A. semitorquata* in the North-Western Province of Northern Rhodesia. *Bull. Brit. Orn. Cl.* 84: 67–69.
Britton, P. L. 1969. Weights of the Pennant-winged Nightjar. *Bull. Brit. Orn. Cl.* 89: 21–24.
Britton, P. L. and Dowsett, R. J. 1969. More bird weights from Zambia. *Ostrich* 40: 55–60.
Brooke, R. K. 1969. Bird Weights (letter). *Ostrich* 40: 217.
Brown, Leslie and Amadon, Dean. 1968. *Eagles, Hawks and Falcons of the World.* Country Life Books, Hamlyn.
Liversidge, R. 1968. Bird Weights. *Ostrich* 39: 223–227.
Mackworth-Praed, C. W. and Grant, C. H. B. 1952. *Birds of Eastern and North-Eastern Africa.* Vol. 1. Longmans, Green & Co., London.
Verheyen, R. 1953. *Exploration du Parc National de l' Upemba.* Fasc. 19, Oiseaux. Inst. Parcs Nat. Congo Belge, Bruxelles.
White, C. M. N. 1965. *A revised check list of African non-passerine birds.* Government Printer, Lusaka.

The races of the Rusty-breasted Nunlet *(Nonnula rubecula)*

by Kenneth C. Parkes

Received 1st October, 1970

The Rusty-breasted Nunlet is one of five rather similar South American species of the bucconid genus *Nonnula*; all are clad in rufous, grey, and dull brown in various combinations, with no striking markings. The first record of the species *N. rubecula* from the Guianas was that of Blake (1963), who identified his one Surinam specimen as *simplex* Todd on the basis of geographic probability, without direct comparison. The species was again collected in Surinam by G. F. Mees, who sent me two of his three specimens to compare directly with the type of *simplex*. After I had borrowed some additional specimens, it became evident not only that the Surinam birds represented an undescribed subspecies, but that the entire species was in need of revision, as the material examined by no means conformed to the subspecies and ranges listed by Peters (1948). The description of the Surinam subspecies as *tapanahoniensis* by Mees (1968) has resolved part of the problem; a review of all of the subspecies, including two to be newly described, is presented in this paper.

The range of the subspecies *N. r. duidae* Chapman was given by Peters (1948: 19) as "Southern Venezuela in the region at the base of Mt. Duida" (north of the Orinoco). Phelps and Phelps (1958: 247), however, extended this to include virtually all of the southern half of Terr. Amazonas, south of the Orinoco to the Brazilian frontier and for an unspecified distance beyond

("Brasil septentrional"). The extension to Brazil is undoubtedly based on Todd (1943), who referred a series of 11 specimens from Tonantins, on the north bank of the Amazon, to *duidae;* Peters apparently overlooked Todd's remarks. It is true that the Tonantins birds (two of which have since been exchanged to other museums) closely resemble *duidae*, and it is understandable that Zimmer (who made the comparisons for Todd) so identified them. However, there is a population of this species, also hitherto assigned to *duidae* but quite different therefrom, interposed between Tonantins and the range of true *duidae* which is restricted to Venezuela north of the Orinoco. These birds cannot be assigned to *duidae* or to any other known subspecies. Friedmann (1948: 434), with a small mixed series before him, overlooked the correlation of colour and collecting localities of his birds, and called them all *duidae*; this series includes the specimen chosen for the type of the new subspecies, which may be called:

Nonnula rubecula interfluvialis subsp. nov.

Type: U.S. National Museum no. 326713, adult male, collected at the mouth of Caño Atamoni, on the Brazo Casiquiare, Terr. Amazonas, Venezuela, 6th February, 1931, by E. G. Holt, E. R. Blake, and C. T. Agostini (collectors' no. 5039) [for this and other Venezuelan localities cited, see map in Phelps and Phelps, 1950].

Characters: Differs from *duidae* in being greyer, less rufescent dorsally, with the crown greyer than the back rather than nearly concolorous; anterior underparts averaging duller, less brightly rufescent; orange-buff of lores more mixed with white; wing longer (6 *interfluvialis*, 66–70 mm.; 8 *duidae*, 63–67 mm.); tail pattern (see beyond) as in *duidae*. Nearer *cineracea* in colour of underparts, but differing from that race in greyer crown and less purely white lores, and in wing length (in which *duidae* and *cineracea* are alike). Differs from *tapanahoniensis* in having *less* contrast between grey of crown and brown of back, somewhat brighter underparts, and white rather than buff under tail coverts.

Range: Between the Río Orinoco in southern Amazonas, Venezuela, and the Rio Negro in northern Amazonas, Brazil.

The Tonantins series mentioned above apparently represents the population next south, in the area lying between the Rio Negro and the Rio Solimões (Rio Amazonas). It may be called:

Nonnula rubecula simulatrix subsp. nov.

Type: Carnegie Museum no. 97733, adult male, collected at Tonantins, north bank of the Rio Solimões, Amazonas, Brazil, 8th August, 1923, by S. M. Klages (collector's no. 34533).

Characters: Exceedingly similar in colour to *N. r. duidae*, but tail darker—comparisons are best made with the second outermost rectrix, which in *simulatrix* is blackish with a sharply defined grey tip, rather than dark brownish grey with the margin of the pale tipping poorly defined, as in *duidae* and *interfluvialis*. The wing is proportionally longer: 8 *duidae*, wing 63–67 mm., tail/wing ratio .791–.841; 8 *simulatrix*, wing 65–70, tail/wing ratio .757–.819.

Range: Presumably western Brazil between the Rio Negro and the Rio Solimões; birds from the south bank of the Solimões are *cineracea* Sclater, which is much duller and has a white loral spot (see Todd, 1953: 18 for detailed comparisons between "*duidae*" [=*simulatrix*] and *cineracea*). Two specimens (AMNH) from Yauanari, on the south bank of the Rio Negro, are nearest *simulatrix* dorsally and in tail pattern, but are rather dull below, apparently representing intergradation with *interfluvialis*.

Remarks on other races: At the time of its description, *tapanahoniensis* was known only from Surinam. I have since examined a specimen (LACM 59690) from the Serra do Navio, Terr. Amapá, northeasternmost Brazil (an area generally Guianian in its avifaunal affinities), which is indistinguishable from Surinam birds. Further, a specimen (AMNH 283556) from Faro, north of the Amazon in Brazil south of Surinam, clearly represents an intergrade between *tapanahoniensis* and *simplex*, the race found south of the Amazon in Pará, Brazil. The range of *simplex* as given by Peters (1948: 19) should thus be amended by deleting the Rio Jamundá, on which Faro lies. True *simplex* appears to be found only south of the Amazon.

A specimen from the confluence of the Ríos Curaray and Napo, Peru (AMNH 255553) extends the range of *cineracea* somewhat farther northwest in Peru than indicated by Peters. This locality was in Ecuador prior to the settlement in 1942 of the Oriente border dispute.

It is quite probable that *N. r. rubecula* (Spix), as presently understood, will prove to be a composite, but the material before me from within the large putative range of the subspecies is too scattered to permit any conclusions to be drawn. The type locality, Malhada, is in western Bahía; the nearest locality to this from which I have seen a specimen is São João de Aliança, central Goiás (LACM 32501). This specimen has much more white on the posterior underparts than any other "*rubecula*" examined. A small series from Victoria, São Paulo (AMNH) is longer-winged and shorter-tailed and rather more richly coloured than a good series from Misiones, northeastern Argentina. Additional material from other localities will almost undoubtedly permit the subdivision of *N. r. rubecula*, and there are several available names, from various parts of the range, listed in synonymy. Incidentally, as Todd (1937: 248) has mentioned, the figure (pl. 45, fig. 1) of "*rubecula*" in Sclater (1881), painted from a specimen thought to be from "Pará", does not represent the nominate race but is probably *simplex* Todd.

Specimens examined:

duidae: VENEZUELA, Cerro Duida (various localities), 6; Cerro Yapacana, 4.

interfluvialis: VENEZUELA, Río Casiquiare (various localities), 5; BRAZIL, Tahuapunto, Rio Uaupés, 2.

interfluvialis x *simulatrix:* BRAZIL, Yauanari, Rio Negro, 2.

simulatrix: BRAZIL, Tonantins, Rio Solimões, 9.

cineracea: BRAZIL, São Paulo de Olivença, Rio Solimões, 4; Hyutanahan, Rio Purús, 4; PERU, confluence of Ríos Curaray and Napo, 1.

tapanahoniensis: SURINAM, Palomeu, 2; Kaysergebergte airstrip, 1; BRAZIL, Serro do Novio, Amapá, 1.

tapanahoniensis x *simplex:* BRAZIL, Faro, 1.

simplex: BRAZIL, Rio Tapajós (various localities), 3; Villa Bella Imperatriz, S. bank of Rio Amazonas, 2.

rubecula (probably composite): BRAZIL, Victoria, São Paulo, 4; São João de Aliança, Goiás, 1; "State of Goyaz", 1; Fazenda Taquari, Rio Paraná, Mato Grosso, 1; ARGENTINA, Misiones (various localities), 14.

ACKNOWLEDGMENTS

Dr. G. F. Mees of the Rijksmuseum van Natuurlijke Historie, Leiden, originally interested me in *Nonnula rubecula* by sending me his Surinam specimens. Carnegie Museum specimens were supplemented by borrowing additional comparative material through the courtesy of Mr. Charles O'Brien, American Museum of Natural History (AMNH); Dr. Kenneth E. Stager, Los

Angeles County Museum (LACM); Dr. George E. Watson, U.S. National Museum; and Dr. Emmet R. Blake, Field Museum of Natural History.

References:
Blake, E. R. 1963. The birds of southern Surinam. *Ardea*, 51: 53–72.
Friedmann, H. 1948. Birds collected by the National Geographic Society's expeditions to northern Brazil and southern Venezuela. *Proc. U. S. Nat. Mus.*, 97: 373–569.
Mees, G. F. 1968. Enige voor de avifauna van Suriname nieuwe vogelsoorten. *Gerfaut*, 58: 101–107.
Peters, J. L. 1948. Check-list of birds of the world. vol. 6. Harvard Univ. Press.
Phelps, W. H. & W. H. Phelps, Jr., 1950. Lista de las aves de Venezuela con su distribución. Parte 2, Passeriformes. *Bol. Soc. Venez. Cienc. Nat.*, 12: 427 pp.
— — 1958. *Ibid.* Parte 1, No Passeriformes. *Op. cit.* 19: 317 pp.
Sclater, P. L. 1881. A monograph of the jacamars and puff-birds, part VI.
Todd, W. E. C. 1937. New South American birds. *Ann. Carnegie Mus.*, 25: 243–255.
— 1943. Studies in the jacamars and puff-birds. *Op. cit.*, 30: 1–18.

New facts on the distribution of *Tauraco ruspolii* Salvadori

by C. Erard and J. Prévost

Received 16th September, 1970

Prince Ruspoli's Turaco remained for a long time only known from the type; the exact locality at which it was collected is still unknown (after considering Prince Ruspoli's itinerary, Moreau (1958) suggests that the specimen might have come from Arero). Some fifty years later, C. W. Benson rediscovered the species at Arero in Sidamo, at 4° 48′ N., 38° 50′ E., and an altitude of about 1800 m., and obtained five birds. In his 1945 paper, Benson suggests that future workers look for the species around Neghelli (Sidamo).

In the course of the expedition of the Laboratoire d'Ornithologie (Muséum National d'Histoire Naturelle) to Ethiopia in 1968, we prospected the Neghelli area but failed to find this turaco. On the other hand we were successful in the montane forests between Wadera and Zembaba in Sidamo, ca 80 km. north of Neghelli, at 5° 40′ N., 39° 20′ E., and an altitude of 1800 m., where we found *T. ruspolii* on 22nd and 23rd May in juniper woods with dense evergreen undergrowth (the same habitat as at Arero).

In an area of about 150 ha we recorded six birds which probably concerned four different pairs. Two collected females showed ovaries the largest follicles of which measured respectively 1 and 2 mm. in diameter: obviously the birds were not breeding.

This new locality is situated about 120 km. to the north-north-east of Arero, and is particularly interesting because we found there within 5 km., both *T. ruspolii* and *T. leucotis*, the former in the juniper, the latter in the broad-leaved forests. This appears to be the first proof of geographical (but not ecological) sympatry between the two species; so the statements of Moreau (1958) and Hall & Moreau (1962) that they could possibly be conspecific no longer hold good.

Recently, J. H. R. Boswall informed us that several years ago a Swedish taxidermist in Addis-Ababa prepared two *T. ruspolii* collected in the same area as ours. One of the specimens was sold to tourists while the other was sent to a museum in the U.S.A.

References:
Benson, C. W. 1945. Notes on the birds of southern Abyssinia. *Ibis* 87: 489–509.
Hall, B. P. & Moreau, R. E. 1962. A study of the rare birds of Africa. *Bull. Brit. Mus. (N.H.), Zool.* 8: 315–378.
Moreau, R. E. 1958. Some aspects of the Musophagidae. *Ibis* 100: 67–112, 238–270.

Some notes on the birds of Angola

by C. Erard and R. D. Etchécopar

Received 16th July, 1970

We stayed in Angola from 4th to 17th October, 1969, spending most of our time bird watching, comparing our experiences with those of the previous two weeks, spent in South-West Africa. Time did not allow any collecting, and we could only pay attention to species with which we were already familiar or whose identification is relatively simple, so that such groups as larks, pipits and cisticolas were neglected. We could only visit a small area between Luanda and Duque de Bragança, in the "Escarpment Zone", the biogeographical importance of which has been discussed by Hall (1960a). The ecology of this area has been discussed by Hall (1960 a, b), Heinrich (1958) and Pinto (1965, 1966).

After consulting the ornithological literature of Angola, especially Traylor (1963) and Pinto (1965, 1966), we felt that the observations which follow were worth publishing. We follow Traylor's nomenclature.

All localities mentioned are in Traylor's gazetteer except the following:
Barra do Cuanza (tributary of the Cuanza): ca 9° 15′ S., 13° 10′ E.
Bom Jesus: 9° 11′ S., 13° 34′ E.
Funda: ca 8° 50′ S., 13° 30′ E.
Lombe: 9° 27′ S., 16° 13′ E.
Lucala Falls (near Duque de Bragança) ca 9° S., 16° 20′ E.
Quiçaca: ca 9° 15′ S., 15° 15′ E.
Quiçama: Reserve extending from north to south between the Rivers Cuanza and Longa, and from east to west between the route from Muxima to Capolo and the sea-coast.
Quitala: ca 9° 15′ S., 14° 05′ E.
Zavula: 9° 20′ S., 14° 47′ E.
Zenza: 9° 20′ S., 14° 15′ E.

Aquila rapax, Tawny Eagle: According to Traylor, only known from the south-west. We saw one on 16th October, near Lombe, Malanje.

Aquila wahlbergi, Wahlberg's Eagle: We saw one on 11th October, between Funda and Cabiri, Luanda; and another the following day at a bush fire, ca 20 km. south of Luanda on the road to Barra do Cuanza.

Haliaeetus vocifer, African Fish-eagle: We found it common along the Cuanza, expecially around Bom Jesus and in the Quiçama Reserve. Some were also seen in the valley of the Bingo between Funda and Cabiri, 11th October.

Torgos tracheliotus, Lappet-faced Vulture: Traylor records it only from two localities in Huila and one in Lunda. We saw an immature bird on 16th October near the Lucala Falls.

Gypohierax angolensis, Palm-nut Vulture: Widespread and abundant in the areas visited. On 11th October an almost fledged young was seen on a nest at Cabiri. Taking into account the long incubation and fledging periods, this record agrees with that of Braun (1934), of nest building in May.

Circaetus pectoralis, Black-chested Snake-eagle: Traylor records it only from the southern districts, though Pinto (1965) saw it in August at Lake Cameia, north-eastern Moxico. We saw one on 14th October between Quitala and Zenza, Cuanza Norte; one on 16th October near Lombe, Malanje; and a pair ca 5 km south-west of the Lucala Falls near Duque de Bragança.

Falco biarmicus, Lanner: Excepting Cabinda, Traylor records it only from the south, north to Benguela and northern Bihe. We saw a hunting bird on 8th October at the Baixa dos Elefantes in the Quiçama Reserve.

Falco cuvieri, African Hobby: Traylor quotes only a record of a ♀ from Dundo, Lunda, 20th November, 1956; and one by Reichenow from Cabinda, "but this is far from its normal range". We saw an adult harrassing in flight a subadult *Haliaeetus vocifer* on 7th October near the camp "pausada" in the Quiçama Reserve.

Falco chicquera, Red-necked Kestrel: We saw one in the valley of the Cuanza near Bom Jesus, 7th October. This is apparently the first record from Angola.

Francolinus adspersus, Red-billed Francolin: On 14th October, in savanna (*Strychnos-Combretum* with abundant *Combretum camporum*) ca 15 km. north-west of Catete, we saw on the roadside two examples of this distinctive species, which we had already well observed in South-West Africa. The record requires confirmation because the species was previously known only from Huila.

Stephanibyx lugubris, Lesser Black-winged Plover: Traylor records it only from Cabinda and the lower Cuanza, though Pinto (1966) found it not rare in December and February in the Luanda District. We saw a dozen around a pool in the Quiçama Reserve, 9th October.

Hoplopterus armatus, Blacksmith Plover: It had not previously recorded from the Luanda District. We regularly saw small flocks of six to twenty birds during our stay in the Quiçama Reserve (7th–10th October). They were especially frequent in the marshy meadows near the Baixa dos Elefantes in the north of the Reserve.

Hemiparra crassirostris, Long-toed Lapwing: We saw and photographed one at the Baixa dos Elefantes in the Quiçama Reserve, where it could be seen every day during our stay from 7th to 10th October. This is apparently the first record from Angola.

Limosa lapponica, Bar-tailed Godwit: It had previously been recorded near Luanda in January by Serle (1955) and on 25th July by Pinto (1966). We saw it regularly in small numbers (singles and small flocks of two to five), especially on 12th October, on the coast between Luanda and Barra do Cuanza.

Calidris canutus, Knot: It had not been reported previously from Angola, though it is known from further south. We saw it twice: ca thirty in a lagoon at Luanda on 5th October, ca forty on a beach near Cacuaco on 11th October. The birds were near flocks of Sanderlings accompanied by some Common Sandpipers and single Turnstones and Ringed Plovers.

Glareola pratincola, Pratincole: Five pairs held territories on the side of a pool near the Baixa dos Elefantes in the Quiçama Reserve (7th–10th October). The birds showed an intensive lure display, and allowed a very close approach. Apparently egg-laying had not yet started, but could have been expected shortly.

Larus dominicanus, Black-backed Gull: Traylor gives it as occasional on the coast after the breeding season; Pinto (1966) as "occasionalmente" in the Luanda District from December to June. We saw two adults and one immature on 5th October at Luanda, accompanied by two *L. cirrocephalus*. We are reasonably sure these three were *L. dominicanus*, not *fuscus*, since two weeks previously we had seen precisely similar birds on the South-West African coast, identified by local ornithologists as *dominicanus*.

We were already thoroughly familiar with the next two species at all seasons in the palaearctic. We are confident that our records, all of birds in winter dress, are entirely correct.

Chlidonias hybrida, Whiskered Tern: Traylor records it only from the Cunene River in Huila. We saw ca thirty on 5th October at Luanda; ca 100 on 10th October at Barra do Cuanza were actively fishing at the mouth of the river; and ca sixty on 11th October near Cacuaco were following the coast southward. The lack of earlier records may be due to confusion with *Sterna hirundo*.

Chlidonias nigra, Black Tern: Traylor records it as being met with occasionally in large flocks along the coast from Cabinda to Catumbella. Pinto (1966) does not mention it. On 5th October there were at least 150 in the harbour of Luanda. On 11th October we witnessed a migration southward along the coast, of between 1,000 and 2,000 (flocks of up to 350 birds) near Cacuaco. On 14th October at Luanda we could find only between thirty and fifty, with five *C. leucoptera*.

Sterna balaenarum, Damara Tern: Traylor gives it as wintering commonly in Cabinda, but elsewhere as only known by a specimen from Luanda. We saw at least 100 on 5th October on lagoons at Luanda; a similar number on 11th October on the coast near Cacuaco; and ca thirty on 14th October at Luanda. They rested on sandbanks. Relatively few were in breeding dress, with a well defined black cap. Contrary to our experience fifteen days earlier in Walvis Bay, most were probably immature.

Corythaixoides concolor, Goaway Bird: We found a nest with two almost fledged young on 9th October in the Quiçama Reserve.

Apus horus, Horus Swift: Its status in Angola is not clear. On 7th October in the Quiçama Reserve, and on 11th October near Funda, we believe we saw a few among *Apus affinis* and *caffer*, more numerous. Compared to these two, the suspected *horus* were slightly larger and plumper built, with more white on the rump. When spread, their tails appeared almost square, but some views when the birds were at a low height, immediately above us, showed them as slightly forked, the edges broader than in *caffer*.

Pseudhirundo griseopyga, Grey-rumped Swallow: We noted a dozen on 16th October among other more numerous swallows, especially *Hirundo abyssinica*, *smithii* and *rustica*, but also *angolensis*, *senegalensis* and *albogularis*, and swifts *Apus affinis* and *caffer*, in a concentration hunting insects over grasslands between Quiçaca and Cacuso, on the Cuanza Norte/Malanje boundary.

Sylvia communis, Whitethroat: It was only known by a specimen collected in Lunda in December. We saw one on 11th October near Funda on the ecotone between open grasslands and *Combretum* woodland.

Terpsiphone rufiventer, Red-bellied Paradise Flycatcher: The type specimen of the subspecies *ignea* probably comes from Cuanza Norte or Malanje. On 15th October we saw a bird with all the characters of this species in primary forest near Zavula in high bushes along a small river. This was our only record, and elsewhere in this forest we saw only *T. viridis*.

Ploceus pelzelni, Slender-billed Weaver: We identified a pair in a marshy clearing in forest (with coffee undergrowth) near Vila Salazar on 15th October. They were continually searching the foliage and branches of bushes like tits. The only previous records are from Cabinda and Cunga on the lower Cuanza.

Estrilda granatina, Violet-eared Waxbill: It had only been recorded in the southern half of the country. We saw a pair on 9th October in the north of the Quiçama Reserve and two others on 11th October near Funda, all in thorn scrub.

Estrilda paludicola, Fawn-breasted Waxbill: Near a small marsh in grasslands, we saw about 20 on 11th October near Funda. It does not seem to have been previously recorded in the Luanda District.

Acknowledgments: For assistance in many ways during the course of our visit we are particularly grateful to the following: Dr. A. J. Duarte of the Instituto de Investigaçao cientifica de Angola; Dr. V. d'Albuquerque Matos of the Servicios de Veterinaria; and to Dr. A. G. Mesquitele Lima. We wish also to thank Mr. C. W. Benson and Mrs. B. P. Hall for advice and assistance in the finalisation of the manuscript.

References:
Braun, R. 1934. Biologische Notizen über einige Vögel Nord-Angolas. *Journ. f. Orn.* 82: 553–560.
Hall, B. P. 1960a. The faunistic importance of the scarp of Angola. *Ibis* 102: 440–442.
— 1960b. The ecology and taxonomy of some Angola birds. *Bull. Brit. Mus.* (*N.H.*), *Zool.*, 6: 369–453.
Heinrich, G. 1958. Zur Verbreitung und lebensweise der Vögel von Angola. *Journ. f. Orn.* 99: 121–141, 322–362 and 399–421.
Pinto, A. A. da Rosa. 1965. Contribuicao para o conhecimento da avifauna da nordeste do distrito do Moxico, Angola. *Bol. Inst. Invest. cient. Ang.* 1: 153–249.
Pinto, A. A. da Rosa. 1966. Notas sobre as coleccoes ornitologicas recolhidas em Angola nas expedicoes efectuadas pelo Instituto de Investigacao cientifica de Angola de 1959 a 1961. *Bol. Inst. Invest. cient. Ang.* 3: 149–236.
Serle, W. 1955. The bird-life of the Angolan littoral. *Ibis* 97: 425–431.
Teixeira, J. Brito, Matos, G. Cardoso de & Sousa, J. N. Baptista de. 1968–69. Parque Nacional de Quicama. Carta de Vegetacao e memoria descritiva 1967. *Protecçao da Natureza* nov. ser. 10: 9–21.
Traylor, M. A. 1963. Check-list of Angolan birds. *Publ. Cult. Diamant. no.* 61. Dundo

The White-headed Barbet in Angola

by R. K. Brooke

Received 26th August, 1970

The White-headed Barbet *Lybius leucocephalus leucogaster* (Bocage) was described from Quilenges in Angola. Traylor (1960: *Publ. Cult. Diam. Ang.* 51: 176) knew of two specimens, both ♀♀ taken in January, in addition to the type, all from Quilenges at 900 m. a.s.l. In point of fact Bocage had three specimens before him, two ♂♂ and a ♀, all adult (Dr. A. A. da Rosa Pinto, pers. comm.). Traylor (op. cit) pointed out that all other races of *L. leucocephalus* (Defilippi) were high country forms and that *leucogaster* was peculiar in coming from a fairly low lying area. He gave the wing lengths as 90 and 92 and the culmen lengths as 23 and 25 mm.

The Instituto de Investigacao Cientifica de Angola at Sa da Bandeira has thirty-three specimens of *L. l. leucogaster*: two mounted and without data and thirty-one study specimens: twelve adult ♂♂, eleven adult ♀♀, one unsexed adult, five juvenal ♂♂, two juvenal ♀♀. The series is remarkably uniform in measurements and there is no appreciable age or sex dimorphism in these respects.

Wing length in adult ♂♂ 89–96, av. 92.8; adult ♀♀ 88–94, av. 91.6; juvenal ♂♂ 91–94, av. 93.2; juvenal ♀♀ 90, 92 mm.

Culmen length adult ♂♂ 23–25, av. 24.0; adult ♀♀ 22–25, av. 23.8; juvenal ♂♂ 22–24, av. 23.2; juvenal ♀♀ 22, 24 mm.

Weight adult ♂♂ 55–70, av. 63.8; adult ♀♀ 55–65, av. 61.8; juvenal ♂♂ 54–64, av. 62.4; juvenal ♀♀ 58, 69 g.

On most specimens the stomach contents were noted; one empty, one with large seeds, six with insects, twenty with fruit. In most cases, both adult and juvenal, the eye colour is described as either chestnut or dark chestnut but in one juvenal ♀ it is described as grey. Most specimens have been collected in Miombo woodland, often open and degraded, but a few in relict patches of dry montane forest at the top of the Chela escarpment including the specimen discussed by da Rosa Pinto (1962: *Bol. Inst. Invest. Cient. Angola* I: 1: 24–25). All but one of the series studied come from the high south-west of Angola within 25 km. of Sa da Bandeira at altitudes varying from 1840 to 2300 m. The exception is from Bibala in January at 1110 m. at the foot of the escarpment. *L. l. leucogaster* must thus be regarded as a primary highland form like the other races of the species despite the possibility of seasonal movement to lower levels after breeding.

The seven juvenals were taken in the months January to April and during this period show a progressive decline in the number of grey-brown feathers on the crown, nape, chest and flanks, areas which are white in adults. They show no wing moult. During January to April the adults are renewing the outer primaries. Egg laying in September and October seems indicated. The two October specimens are in fairly fresh plumage which may indicate a second wing moult in September, especially as the one August specimen is in worn plumage, but equally they may all three be first year birds who moult their primaries just before breeding.

I am obliged to Dr. da Rosa Pinto for facilities for study at Sa da Bandeira, for permission to discuss this form and the gift of a mounted specimen; also to M. P. Stuart Irwin for the loan of an adult and a juvenal from near Sa da Bandeira collected by the IICA and now in the National Museum of Rhodesia, Their measurements have not been included in the figures above even though the adult ♀ extends the weight range to 70 g.

Four descriptions of nesting, previously undescribed, from Ethiopia

by Emil K. Urban, L. H. Brown, C. E. Buer and G. D. Plage

Received 18th September, 1970

In the preparation of a checklist of the birds of Ethiopia (Urban & Brown, in press) nestings of four African species (including two endemics to Ethiopia), hitherto not described (Mackworth-Praed & Grant, 1957, 1960), have been found; they are as follows:

Vanellus melanocephalus, Spot-breasted Plover: On 25th April, 1970, C.E.B. discovered the nest on a meter-square rock island in a shallow pool (20 cm./50 cm.) in a moorland with small lakes and giant lobelia, about 15 km. west of Goba, 4200 m., 6° 55′ N., 39° 47′ E. A shallow scrape within a patch of grass and moss, the nest contained four eggs, brownish blue to smoke grey in colour, and heavily marked with black (color identification based on Palmer, 1962). Although C.E.B. did not observe the breeding bird on the nest, the noisy behaviour of the adult Spot-breasted Plover, the only plover present, and the warmth of the eggs conclusively suggested that the nest and eggs were of this species. Further details will be published by Buer (in prep.).

Tockus hemprichii, Hemprich's Hornbill: The nest site was located by L.H.B. on 10th March, 1970, in a cliff above the Bekele Molla Hotel site at Lake Langanno, 1585 m., 7° 35′ N., 38° 45′ E. On 7th March a ♂ was seen displaying on an Acacia tree on top of the cliff. Display consisted of uttering a long series of piping calls, with the beak pointing vertically skywards, the body bobbing up and down and wings partly spread. Towards the end of the series of calls, a break in the series is followed by shriller calls at accelerated tempo, during which the tail is raised vertically over the back and partly spread to expose the white outer feathers. The behaviour is clearly akin to but rather more elaborate than displays performed by Grey Hornbills *T. nasutus*, or Red-billed Hornbills *T. erythrorynchus*.

At 07.00 hours on 10th March the pair were seen continually coasting to and fro along the top of the cliff. One, smaller, presumably the ♀, was carrying lumps of material, which were deposited in a hole in the cliff. The larger ♂ followed the ♀ to and fro, but carried no material. When the hole was later examined from above, the ledge in front of it was seen to be covered with chips of dead wood or bark. It was clear that the ♀ had not yet begun to incubate but was prospecting the site.

On 12th April, 1970, an adult was found sealed into the cavity. The hole in the cliff was about 60 cm. high x 30 cm. wide, the seal being dark glossy brown, with a slit 7.2 cm. high x 2.2 cm. broad. Numerous pieces of dead wood about 8 cm. long lay in front of the entrance. Some of this material may have been used in making the wall. Incubation had perhaps begun by 21st March, when only one bird was seen to visit the hole by E.K.U. On 12th April, 1970, the ♀ was probably brooding recently hatched young, since on 19th April, 1970, three nearly featherless young, light grey in colour, and about 15 cm. long were seen in the hole with the ♀ by G.D.P. On 17th May only one bird was seen flying to the nest site by E.K.U. so that the ♀ was probably still inside the hole. On 20th June E.K.U. saw four fully-grown birds, perhaps the adults and two fledged young, flying in the vicinity of the nest site and cliff.

Alan Root had earlier informed L.H.B. that he believed Hemprich's Hornbill to breed in holes in cliffs at Lake Baringo, Kenya (Root, pers. comm.) but as far as is known this is the first Hemprich's Hornbill's nest carefully examined. It appears likely that the ♀ remains in the hole for more than 60 days, in which time she and the brood are fed by the ♂, as in other *Tockus* spp. The whole breeding season from laying to emergence of the young may last 80–90 days. *T. hemprichii* is usually, but not always, associated with rocky cliffs and gorges, and such places may prove to be the normal breeding situation.

Parophasma galinieri, Abyssinian Catbird: On 30th May, 1970, C.E.B. found the nest 5 m. up in the top of *Hypericum lanceolatum*, Dinshu, 3200 m., 7° 08′ N., 39° 48′ E. The nest, a frail, thin structure of fine plant stems perched loosely on top of two or three small branches and vines, was shaded by a tangle of vines (sp. ?) and *Galium*. Two pale flesh-coloured eggs, uniformly covered with fine flesh marks and a few dark chestnut spots (color identification based on Palmer, 1962), were in a nest cup, 70 mm. in diameter and 30 mm. deep. Although the adult was at the nest, incubation probably had not started for the eggs were cold. On 13th June, the eggs were being incubated; on 21st June two nearly featherless young about four-six days old were seen; on 26th June the young had some short grey feathers; and on 1st July the young were well feathered but not yet able to fly (Buer, in prep.).

Onychognathus salvadorii, Bristle-crowned Starling: On 27th May, 1965, Beals (pers. comm.) discovered a solitary nest 2 m. above the ground in a hole of a stone wall within an arch of a stone bridge; young birds were heard calling, 10 km. north of Dire Dawa, about 1400 m., 9° 37′ N., 41° 52′ E. On 21st June, 1970, C.E.B. discovered two adults roosting on nests in a rock passage 50–75 m. inside an entrance of the Sof Omar caves, 116 km. east of Goba, about 1345 m., 6° 50′ N., 40° 33′ E. The two nests, made of sticks, stems and grass held together with clay, were on a narrow shelf of a vertical passage wall 4 m. above the floor of the cave. Laying had not started since the nests had no eggs. Mackworth-Praed & Grant (1960) erroneously give a description of the nest of the species, quoted from Sir G. Archer who, however, in his own work (Archer & Godman, 1961) wrote that this description refers to the nest of *Buphagus erythrorhynchus* not *O. salvadorii*.

References:

Archer, G. & Godman, E. M. 1961. *The Birds of British Somaliland and the Gulf of Aden*, Vol. IV. London.

Buer, C. E. Notes on the birds of the Bale Mountains, Ethiopia, in prep.

Mackworth-Praed, C. W. & Grant, C. H. B. 1957, 1960. *Birds of Eastern and North Eastern Africa*, Vol. I & II. London.

Palmer, R. S. ed. 1962. *Handbook of North American birds*, Vol. I. New Haven.

Urban, E. K. & Brown, L. H. *A checklist of the birds of Ethiopia*. Haile Sellassie I University Press, in press.

On *Smithornis capensis suahelicus* Grote, 1926

by P. A. Clancey

Received 7th September, 1970

Grote (1926) proposed *S. c. suahelicus* on a specimen collected at Magagoni, Ruvu=Pangani R., north-eastern Tanzania, on 30th June, 1910. I have recently studied this skin in detail, and find that it is a sub-adult ♂ with a flattened wing of 71, a tail of 53, and a culmen from base of 17 mm. In the second part of their interesting series of studies of Tanzanian birds, Ripley and Heinrich (1969) review the variation in the African Broadbill *Smithornis capensis* (Smith) in East Africa and employ Grote's name *suahelicus* for birds of the coastlands from the Pugu Hills, 50 km. S. of Dar-es-Salaam, Tanzania, south to Moçambique, commenting 'The name *suahelicus* is tentatively applied to this subspecies, because it is said in the original description . . . that this form is "smaller than *medianus*". . . .However, the type of *suahelicus* was not examined, and therefore the applicability of this name to the populations of eastern Tanzania and of northern Moçambique needs confirmation'. Study of the type of *suahelicus* in association with material of other races from east, southern and western (Angola) Africa confirms the races for East Africa as laid down by Ripley and Heinrich, but indicates that adjustments require to be made to the names applied to two of the taxa recognized.

Variation in the African Broadbill affects general size, the colour and markings of the upper-parts, the intensity of the ventral streaking, and the crown of the ♀, which may be streaked in some races, plain black in others. Despite the fact that this is a species of liane tangles, thickets and evergreen forest, it quite clearly exposes itself freely to the sun in glades and clearings because in all populations the upper-parts lose their bronzy or citrine colour, changing in the space of three or four months to a nondescript greyish olive, and the ground to the underside whitens, the buff wash disappearing.

Ripley and Heinrich consider that the upper limit of the wing-length spectrum in coastal East African birds is 70, but this requires to be modified somewhat, as several measured by me from south-eastern Tanzania and Moçambique have flattened wings of slightly in excess of 71, and the wing-length spectrum of all eastern coastal birds from the Kenya coast, south to the Lebombo Mountains, in eastern Swaziland, and north-eastern Zululand is actually 66–72 mm. Birds as small as those of the Kenya coast have been measured from Mt. Gorongosa and Sul do Save, in Moçambique, so that the average smaller dimensions of the Kenya coast populations cannot be gainfully employed in arranging the eastern littoral birds into more than one generally acceptable subspecies. The flattened wing of the type of *suahelicus*, 71 mm., falls neatly within the determined variation of the eastern coastal populations.

Compared with examples of *S. c. medianus* Hartert and van Someren, 1916: Kiambu Forest, Nairobi, Kenya, the type of *suahelicus* differs in having the upper-parts paler, more ochraceous, less dull rusty olive-brown, the black sub-apical spotting to the dorsum on the whole more extensive, and the streaking below rather finer. The size is also smaller (wings in *medianus* 73–77 mm.). Compared with *S. c. meinertzhageni* van Someren, 1919: Lerondo, Kavirondo, Kenya, the upper-parts are paler and more ochraceous, less brownish, and below the streaking is paler, browner, and much finer. The slight difference in size is probably of no import.

On comparison with a good series of *S. c. cryptoleucus* Clancey, 1963: Bela Vista, Sul do Save, Moçambique, from Moçambique and eastern Swaziland, the type of *suahelicus* is found to be rather redder and richer above. Below, the ground colour is more creamy, less cold white, and the malar surfaces, breast sides, lateral body surfaces and flanks are more strongly washed with cream-buff, and the streaking is both paler, browner and finer.

In having a wing of 71 mm., the upper-parts about the Dresden Brown of Ridgway, the ventral streaking brown and fine, the type of *suahelicus* agrees with several other skins available from north-eastern Tanzania, in so doing corresponding well with the diagnostic characters laid down for *S. c. shimba* van Someren, 1941: Makadara Forest, Shimba Hills, south-eastern Kenya, by Ripley and Heinrich. When I reviewed the variation in this species in eastern and southern Africa (Clancey 1963), I was quite unable to appreciate the characters ascribed to *shimba* in the differential diagnosis (van Someren 1941), and while I have not again had access to the paratypical material of *shimba* before me when I wrote in late 1962, I see no reason to modify my earlier opinion that *shimba* and *suahelicus* are synonymous, an opinion now reinforced by a careful study of the type of *suahelicus*.

From a reading of the characters laid out by Ripley and Heinrich for their East African *Smithornis* taxa and examination of pertinent material, I submit that the *S. c. shimba* of these authors is in fact *S. c. suahelicus*. The type-localities of the two names, *shimba* and *suahelicus*, lie less than 150 km. apart.

In the case of their *S. c. suahelicus*, study of specimens from Lindi and Mikindani, Southern Province, Tanzania, and from many parts of Moçambique reveals that this is *S. c. cryptoleucus*, the range of which was recently modified in Clancey (1969), The range of *suahelicus* ("*shimba*") as given by Ripley and Heinrich now requires to be extended south to include north-eastern Tanzania south to about 7° S. lat., while that of *cryptoleucus* ("*suahelicus*") will be from the coastal lowland of the Southern Province, Tanzania, south through Moçambique to north-eastern Zululand and the Lebombo Mountains.

The populations present in the southern highlands of Tanzania appear to be *S. c. albigularis* Hartert, 1904: Canhoca, Cuanza Norte, Angola, though I have been unable to establish this with any degree of assurance, as I have not examined an adult ♀ from the region. In the race *albigularis*, the crown of the ♀ in other than very fresh dress is black like that of the ♂, and the sexes are indistinguishable. In the case of the ♀ of *S. c. suahelicus*, the crown is streaked, the feather shaft-streaks sepia, edged laterally with dark olive-brown, resulting in an almost uniform dark facies. In *cryptoleucus* the streaking is in sharp relief, with the dark shaft-streaking contrasted against grey lateral edging.

Acknowledgment: I am extremely grateful to Dr. G. Mauersberger of the Ornithological Department of the Institut für Spezielle Zoologie und Zoologisches Museum, Berlin, for the loan of the type of *S. c. suahelicus* and other material used by Hermann Grote in his studies.

References:

Clancey, P. A. 1963. Miscellaneous Taxonomic Notes on African Birds. XX, *Durban Mus. Novit.*, vol. vi, 19: 231–241.

— 1969. A Catalogue of Birds of the South African Sub-Region. Suppl. 1. *Durban Mus. Novit.*, vol. viii, 16: 293.

Grote, H. 1926. Kurse Mitteilungen, *Ornith. Monatsber.*, vol. xxxiv, 1: 17, 18.;

Ridgway, R. 1912. *Color Standards and Color Nomenclature.* Washington.

Ripley, S. D. & G. Heinrich. 1969. Comments on the Avifauna of Tanzania, II, *Postilla* (Peabody Museum Yale University), No. 134; 12–17.

van Someren, V.G.L. 1941. Two new Races of *Smithornis capensis* (Eurylaimidae) from Kenya Colony. *Bull. Brit. Orn. Club*, vol. lxii: 35–37.

The original description by H. O. Forbes of the extinct New Zealand Musk Duck *Biziura delautouri*

by Graham S. Cowles

Received 5th October, 1970

In a recent paper, Harrison & Walker (1970) agreed with Scarlett (1969) in recognizing that a subfossil bone, a tarsometatarsus, collected in New Zealand some eighty years ago by H. O. Forbes and referred to since then as *Biziura lautouri*, differed only slightly in size from the still living Australian Musk Duck *B. lobata*, and subsequently after examination they identified it as belonging to this latter species. It was further considered, as Scarlett (*loc. cit.*) had also suggested, that the species *B. lautouri* was invalid as a name and should be regarded as being a *nomen nudum* due to the lack of any evidence to support a precise type locality and in the absence of any information to establish which bone was originally determined as the type element. In reaching this last conclusion all three authors have agreed with Lambrecht (1933).

Scarlett (*loc. cit.*) states: "In The Transactions of the New Zealand Institute, Vol. 24 p. 188, H. O. Forbes mentions a bone, or bones, of *Biziura* without specifying which bone he had, or its locality. The latter is, presumably Enfield Swamp." Harrison & Walker (*loc. cit.*) state: "He [Forbes] gave no description or illustration—indeed, he did not even state which bone or bones were represented—and he mentioned no more precise locality." On the assumption that there is no evidence appertaining to the type material, all four authors were correct in suggesting that the name *B. lautouri* be made unavailable, as indeed it is, but not only for that reason.

What has been sadly overlooked is the remark made by Hildegarde Howard who, in writing the section dealing with the fossil Anseriformes in Delacour (1964, 4, p. 320) clearly draws attention to the fact that the reference, *Trans. N.Z.Inst.*, 1892 (or 1891, as incorrectly cited by Lambrecht, *loc. cit.*), is *not* the original type description, although recent authors assume that it is and still use it as such. This erroneous and vague "type" description was only an abstract of a preliminary note, as the title indicates, read by Forbes before a meeting of the Philosophical Institute of Canterbury, New Zealand, on 1st October, 1891, but it was not published in the *Trans. N.Z.Inst.* (for 1891) until May 1892. The month of publication is important as it is antedated by two earlier and enlarged accounts of the same fossil find written by Forbes for *Nature*, 3rd March, 1892 and repeated in *Science*, 18th March, 1892. The appearance in print some two months earlier than the publication of the Transactions permits the article in *Nature* to be accepted into the nomenclature and constitutes a valid type description. The article not only gives a most precise collecting locality, but also designates an excavated "[tarso] metatarsus" as the type element. Of great interest is the different spelling used by Forbes for the proposed new species; *B. delautouri*, not *B. lautouri* as appears in the later invalid account, perhaps due to a printer's error. From the article in *Nature* it is made quite certain that Forbes *did* assign his new name to the fossil bone because of the recognizable difference in size (see Harrison & Walker, 1970 p. 8), for Forbes records ". . . crania of *A. australis*, are among the bones recovered at Enfield, in addition to the metatarsus of a *Biziura*, somewhat larger than *Biziura lobata*, the musk duck of Australia, an interesting species for which I have proposed the name of *Biziura de Lautouri* [sic] after the gentleman to whom I am indebted for the acquisition of these bones".

The type locality is quite definite. Forbes commences his article; "A deposit of Moa bones, larger than has been found for many years, has just been discovered near the town of Oamaru, in the province of Otago, in the South Island of this colony . . . The site of the deposit was at Enfield, some ten miles to the north-west of the town, on ground elevated several hundred feet above the level of the sea, in a shallow bayleted hollow, into which the unbroken surface of the expansive slope gently descending from the Kurow hills to the open vale of the Waireka (a stream that rises further to the west) has sunk here for some seven to eight feet below the general level, and which, proceeding with a gentle gradient valleywards, becomes a ditch-like conduit for a tributary of the Waireka. In the centre of this depression, which does not exceed 10 to 12 yards in width, the ground was of a dark brown colour, damp and peaty . . ."

Forbes did not record whether the subfossil bone was from a right or left leg, but as there is no evidence of any other fossil *Biziura* tarsometatarsus existing in his collection, apart from this one, the bone now in the British Museum (Natural History), registered number A.1504, is assumed by 'indication' to be the holotype of *Biziura delautouri*, Forbes 1892, *Nature* 45

(No. 1166) pp. 416–417, collected at Enfield, near Oamaru, South Island, New Zealand.

Conclusion: These nomenclatorial notes do not alter any previous hypothesis which may indicate that the fossil bone from New Zealand could belong to the Recent species *B. lobata* of Australia; they do, however, require that in future the specific name *B. delautouri* be recognized and incorporated into the synonymy of *B. lobata* not only because the type validity is shown to be justified but also to ensure that Forbes' original description is not again overlooked.

As a footnote, I would add that it is surprising to find that no recent author has examined the Pleistocene tarsometatarsus of the palaeospecies *B. exhumata* from Darling Downs, Queensland. De Vis (1889) describes the bone as being only two thirds the size of a ♂ *B. lobata* tarsometatarsus, but a humerus found later in South Australia and attributed also to *B. exhumata* was said (De Vis 1906) to be "larger but not greatly so" than *B. lobata*, a description which could well fit also the New Zealand fossil (Harrison & Walker 1970 p. 10).

References:

Delacour, J. 1964. *Waterfowl of the world.* Vol. 4. Country Life, London.

De Vis, C. W. 1889. Additions to the list of fossil birds. *Proc. Roy. Soc. Queensland* 6: 55–58.

— 1906. A contribution to the knowledge of the extinct avifauna of Australia. *Ann. Queensland Mus.* 6: 3–25, pl. 4, figs. 1–3.

Forbes, H. O. 1892 (3rd March). On a recent discovery of the remains of extinct birds in New Zealand. *Nature* 45 (No. 1166): 416–418.

— 1892 (18th March). On a recent discovery of the remains of extinct birds in New Zealand. *Science* 19 (No. 476): 163–165.

— 1892 (May). Preliminary notice of additions to the extinct avifauna of New Zealand (abstract). *Trans. N. Z. Inst.* 24: 165–189.

Harrison, C. J. O. & Walker, C. A. 1970. The extinct Musk Duck (*Biziura*) of New Zealand: a re-appraisal of *B. lautouri. Bull. Brit. Orn. Cl.* 90: 6–10.

International Code of Zoological Nomenclature. 1964. London: International Trust for Zoological Nomenclature.

Lambrecht, K. 1933. *Handbuch der Palaeornithologie.* Gerbrüder Borntraeger, Berlin.

Scarlett, R. J. 1969. The occurrence of the Musk Duck *Biziura lobata* (Shaw), in New Zealand. *Notornis* 16: 57–59.

The Cambridge collection from the Malagasy Region

by C. W. Benson

Received 10th October, 1970

Gadow (*Ibis*, 1910: 47–53) has given an account of the ornithological collections in the University Museum of Zoology, Cambridge. Mention is made of *The Madagascar Collection*, consisting of 826 skins, made by Sir Edward Newton (brother of Prof. A. Newton). In the present paper reference is made to the more interesting *skins* from the Malagasy Region, using this term in the same sense as in A. L. Thomson (ed.) (*New Dict. Birds*, 1964: 443–444). Gadow also refers to osteological specimens, some of them from Mauritius (see especially E. Newton & Gadow, *Trans. Zool. Soc. Lond.* 13, 1893: 281–302, and Hachisuka, 1953). Such material, not forgetting that also from Rodriguez, is justly famous, but is outside the scope of the present paper. The skin collection actually comprises 1,093 specimens, divisible as follows: Rodriguez 28; Mauritius 222; Réunion 40; Madagascar 562; Comoro Archipelago (Grand Comoro and Anjouan only) 114; Aldabra Archipelago 16; Amirante Islands 7; Seychelles 104. The collection was started by Sir E. Newton (he was knighted in 1887), who served in the Colonial Service in Mauritius from 1859 to 1877. During this time he himself visited Rodriguez, Madagascar and the Seychelles, and at his instance C. E. Bewsher visited Anjouan, in the Comoros. After he left Mauritius, his brother continued to add to the collection, through contacts mainly on the continent of Europe. A register of the collection still exists, the last entry by the Professor being dated 1905. There are accounts of the careers of the Newton brothers in *Ibis*, 1908, Jubilee Suppl.: 107–120 It is some testimony to them that of the 27 forms listed in Appendix 1 below only one is not now recognised.

I am indebted to Dr. F. R. Parrington, F.R.S., the late Director of the University Museum of Zoology, Cambridge, his successor, Dr. K. A. Joysey, and R. D. Norman, Senior Assistant, for facilitating my examination of the collection. Dr. Joysey also criticised a draft of this paper. Thanks are also due to Prof. W. H. Thorpe, F.R.S., and Drs. W. R. P. Bourne and D. L. Serventy, for their interest. I am also grateful to the authorities in the British Museum (Natural History), London, and the Muséum National d'Histoire Naturelle, Paris, for access to material under their care; and to Dr. Ch. Erard for drawing my attention to a catalogue of forms extinct or nearly so is in the latter museum (Jouanin, 1962). This paper is not referred to by Greenway (1967), but nonetheless is important.

Except as qualified, the nomenclature followed is that of Peters *et al.* (1931–70).

Forms of particular interest in the collection

Puffinus lherminieri bailloni (Bonaparte): Rountree *et al.* (1952: 157) consider there is no proof of its occurrence on Mauritius, while Watson *et al.* (1963: 140) are doubtful. There are three specimens therefrom in Cambridge; one from Plaine Wilhems, 8th June, 1860, and two from Coromandel, 25th and 29th August, 1865. They have been seen by Dr. C. Jouanin, and it is expected that he will consider them in a study of this species. R. Newton (1958: 48) quotes testimony that it breeds on Mauritius, but doubts if it still does so.

Pterodroma aterrima (Bonaparte): One of the few specimens in existence is in Cambridge, and is included in a study by Jouanin (*Oiseau*, 1970: 48–68).

Pachyptila belcheri (Mathews): A specimen from Grand Port, Mauritius, collected in 1866 (no month given), has been identified as such by Dr. Serventy. It has wing 173; culmen (exposed) 24; width of bill at base 10 mm. It was originally identified by Hartlaub (1877: 377) as *Prion turtur*, Sol. (sic). Rountree *et al.* (1952: 165) also use the specific name *turtur*. The differences between the various species are given by Serventy & Whittell (*Birds W. Australia*, 1967: 83).

Fregetta tropica (Gould): Roch & E. Newton (Ibis, 1863: 175, as *Thalassidroma melanogaster* Gould) record this species between Mauritius and Tamatave. The specimen to which they refer is labelled 24th September 1861, 120 miles east of Tamatave. According to Dr. Serventy, who has seen it, no subspecies are recognisable. This and other records from the western Indian Ocean are referred to by Bailey (*Ibis*, 1968: 508).

Fregata minor aldabrensis Mathews, *F. ariel iredalei* Mathews: Only the latter is accepted for Mauritius by Rountree *et al.* (1952: 168). There is an immature specimen, sexed ♂, from Cannonier's Point, Mauritius, collected by

Dr. W. H. Power on 13th February, 1865. It has wing 620; culmen (from base) 117, (exposed) 110 mm. From these measurements it would appear to be *F. m. aldabrensis*, not *F. a. iredalei*. Another specimen obtained by the same collector at the same place the following day, sexed ♀, apparently in adult plumage, is however *F. a. iredalei*. It has an unusually long wing-length of 571, but culmen measurements are (from base) 93, (exposed) 87 mm. only. Both species are recorded by Newton (1958: 51) and by Staub & Gueho (*Proc. Roy. Soc. Arts and Sci. Maurit.* 3(1), 1968: 18) as breeding in the Cargados Carajos Archipelago, so that the occasional occurrence of both on Mauritius is not surprising. Incidentally, Forbes-Watson (*Atoll Res. Bull.* 128, 1970: 8) records seeing a pair of *F. ariel* off Moheli, in the Comoros, and Lowe (*Nov. Zool.* 31, 1924: 312) records a specimen of *F. a. iredalei* from the archipelago.

Sula abbotti Ridgway: There are two specimens from Assumption, in the Aldabra Archipelago, received from J. C. F. Fryer in 1911. The species is only now known from Christmas Island, in the eastern Indian Ocean, and the only other specimen from Assumption is the holotype. Gibson-Hill (*Bull. Raffles Mus.* 23, 1950: 65–76) has discussed fully the two Cambridge specimens.

Ardeola ralloides ralloides (Scopoli): It is not recorded from Mauritius by Rountree *et al.* (1952). Benson *et al.* (1970: 3), who give reasons for employing a trinomial, have drawn attention to a specimen collected there in May 1872. It is in winter dress.

Ixobrychus sinensis (Gmelin): Loustau-Lalanne (1963: 15) records it as common in the Seychelles, on Mahé, Praslin and La Digue. Two specimens collected by E. Newton on Mahé, 26th January, 1867, recorded by him (1867: 343) as *Ardeola lepida*, are available in Cambridge. There are also three from Mahé in Paris, collected by Lantz, two of them mounted and undated, the other dated October 1877, and presumably the specimen referred to by Salomonsen (*Proc. Zool. Soc. Lond.*, 1934: 222). Measurements in mm. of these specimens are:

	Wing	Culmen from base	Tarsus
		Cambridge	
♂	146	57	52
♀	130	53	44
		Paris	
♂	130	58	49
♂	134	58	49
♀	133	56	45

The sexing as above does not altogether agree with that of the collectors. Apparent ♂♂ are plain on the crown and mantle, whereas ♀♀ are streaked; and see Bock (*Amer. Mus. Novit.* 1779, 1956: 22) who found sexual differences in the genus as a whole. Salomonsen suggests that Seychelles specimens are relatively pale. Actually there does not appear to be any difference in either colour or size from Asiatic ones. A sample of material in London from India, Burma, Siam and Malaysia measures correspondingly as follows:

18♂♂	128–136 (131.9)	53–63 (56·0)	42–53 (48.6)
13♀♀	125–146 (131.7)	53–61 (57.2)	46–51 (48.4)

The Cambridge ♂ from the Seychelles has an unusually long wing, but two of the Asiatic ♀♀ measure as much as 142, 146 mm. Incidentally, material in London from the Andaman and Nicobar Islands is relatively short-winged, the corresponding figures being:

1♂	122	59	49
7♀♀	122–132 (127.0)	53–58 (55.1)	46–50 (48.0)

Vaurie (1965: 58), who does not recognize any races, does not mention the occurrence of *I. sinensis* in the Seychelles. From the lack of any differentiation, it would seem to be a recent coloniser of the archipelago. Newton (*op. cit.*) was told that it laid white eggs, whereas Loustau-Lalanne (*op. cit.*) gives the colour as pale blue. The latter is probably more correct; see Ali & Ripley (*Handbook Birds India and Pakistan* 1, 1968: 87).

Haliaeetus vociferoides Des Murs: There is a tarsus and foot of this species, from Grand River, Mauritius, "end of 1859". The bird was caught alive, but as it had a wing broken it only lived a few days. Rountree *et al.* (1952: 188) mention that one was shot on Mauritius about 1867. The original source of this information was presumably Gurney (*Ibis*, 1869: 449), quoted by Hartlaub (1877: 6). In London there is a head, and tarsus and foot, merely marked "Mauritius. Sir Edward Newton", part of the Gurney collection of raptorials received from the Norwich Museum in 1955. D. Goodwin and I have compared the two tarsi and feet, and concluded that they could have come from the same individual. The head is marked as immature, but appears to be of an adult.

Circus aeruginosus aeruginosus (Linnaeus): A specimen from Mahé is referred to by Gaymer *et al.* (1969: 176). This appears to be the only record from the Malagasy Region.

Falco peregrinus calidus Latham: Rountree *et al.* (1952: 187) refer to a specimen of undetermined subspecies shot on Mauritius about 1865. What is apparently the same specimen, in Cambridge, actually dated 23rd December 1870, had been previously mentioned by Hartlaub (1877: 9). It is attributed by Benson & Penny (1970: 515) to *F. p. calidus*, and is apparently the only record of this subspecies from the Malagasy Region.

Falco eleonorae Géné: Rountree *et al.* (1952: 188) record only *F. concolor* Temminck. A specimen in Cambridge from Mauritius which has always been supposed to be *concolor* is actually *eleonorae* (see Benson & Penny, 1970 515).

Coturnix coturnix near *africana* Temminck & Schlegel: Benson & Irwin (*Arnoldia, Rhodesia* 2(13): 13–14) could examine only seven specimens from Madagascar, which they named as above. Three of these are in Cambridge.

Rallus philippensis ?australis (Pelzeln): Rountree *et al.* (1952: 180) refer to a vagrant specimen from Champ de Mars, Mauritius killed in 1863. A specimen so labelled is available, except that it is dated 1873 (no month given). It is sexed ♂. Identification down to species level seems certain, even though the plumage is very worn, with most of the feathers of the crown and rump absent. But rufous chequering of the primaries, and rufous on the chest, sides of head and nape, as in *R. p. australis*, is apparent. It has been compared in London with 30 specimens of this form, which on geographical grounds is the most likely. An alternative is *R. p. andrewsi* (Mathews), of the Cocos Keeling Islands. A single specimen of this form is much more blackish above, the mantle being wholly black, except that each feather is tipped with white, giving a barred appearance. The Mauritius specimen has the mantle olive spotted with white, as in *australis*. The wings are incomplete, but the culmen (from base) measures 37, the tarsus also 37 mm.

Gallinula chloropus subspp.: Benson (1960: 41) discussed variation in the Malagasy Region, and gave some measurements. A specimen in Cambridge from Mauritius—the holotype of *G. c. pyrrhorhoa* A. Newton—has wing 170, middle toe with claw 70 mm.; while two from the Seychelles both have wing 165, middle toe with claw 67, 68 mm. Another specimen also not previously available, in Paris, collected on Réunion in July 1952, measures respectively 168, 69 mm., and is *pyrrhorhoa*. I see no reason to change my earlier opinion that Seychelles birds are best placed with African *G. c. meridionalis* (Brehm). According to Gaymer *et al.* (1969: 175) the species is common on La Digue, less so on Mahé, Praslin, Curieuse and probably other islands. The first four islands apart, in London there are two specimens from St. Denis (Dennis), 26th August, 1907, and one from Cousin, 6th February, 1888; and in Paris two from Aride, August 1877.

There is a third specimen from the Seychelles in Cambridge. It died in the London Zoo on 20th December, 1870, and is the holotype of *G. dionysiana* A. Newton (*Dict. Birds*, 1893–96: 590, footnote). It was thought to represent a form which had partially lost the power of flight due to the shortening of the wings. Reference is made to *Proc. Zool. Soc. Lond.*, 1867: 1036, recording receipt of three *G. chloropus* from St. Denis, presented by E. Newton on 8th April, 1867. E. Newton himself (1867: 358, and *Trans. Norfolk and Norwich Nat. Soc.* 4, 1888: 552) refers to these three specimens. According to the earlier reference he thought they were 'normal *Gallinula chloropus*', but later he concluded they were a distinct form. After their arrival at the London Zoo, one escaped, another was killed and eaten by a gull, and the third, when it died, was so disfigured after its captivity of nearly four years that he forebore to describe it (this was done in due course by his brother). It would appear that E. Newton's original opinion was the correct one. One wing of the specimen measures only 130, the other 140 mm. But the tips of the primaries appear to have been cut off, and I see no reason to believe that it was originally in any way peculiar. Furthermore the two specimens in London from St. Denis already mentioned are normal, with wing-lengths 159, 171 mm. (the larger one was overlooked by Benson, 1960: 42, and has middle toe with claw 80 mm.). The holotype of *dionysiana* has the tarsus and feet missing from one leg, and the toes of the other are badly deformed. G. S. Cowles, of the British Museum (Natural History), has also examined this specimen, and agrees that it is merely a deformed *G. chloropus*.

Porphyrio alleni Thomson: Bourne (*Ibis*, 1968: 342) has drawn attention to a specimen from Rodriguez, collected in December 1873.

Charadrius hiaticula tundrae (Lowe): This species is not mentioned by Rountree *et al.* (1952). There is a specimen sexed female collected by Dr. W. H. Power at Cannonier's Point, Mauritius on 13th December 1864. Its wing-length is 125 mm. It is probably best named as above.

[*to be continued*]

CONTRIBUTORS

Contributions are not restricted to members of the Club. They should be addressed personally to the Editor, C. W. Benson, Department of Zoology, Downing Street, Cambridge. Contributions are accepted on condition that sole publication is offered in the first instance to this *Bulletin*. They should be type-written, double-spaced, with wide margins, on one side of the paper, and submitted in duplicate.

References to literature should be listed at the end of a contribution, in the same format as in the notice to contributors to the *Ibis* (see any 1969 number). Considerations similar to those in the *Ibis* notice also apply in regard to nomenclature, scientific names of species and genera, and illustrations including photographs.

Contributors introducing a new name or describing a new form should append *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In such a description, the introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further headings as required.

Contributors are entitled to a maximum of ten free copies of the number of the *Bulletin* in which their contribution appears, provided that it exceeds one page of the *Bulletin*. Extra copies at cost price can be ordered through the Editor at the time of submission of the manuscript.

BACK NUMBERS OF THE *BULLETIN*

Applications for back numbers should be made to N. J. P. Wadley, 95 Whitelands House, London, S.W.3. Each copy will cost 5*s*. for years up to 1968 (Vol. 88) and 7*s*. 6*d*. for subsequent years. Members who have back numbers of the *Bulletin*, which they no longer require, are requested to send them to Mr. Wadley.

SUBSCRIPTION TO *BULLETIN*

The *Bulletin* may be purchased by non-members annually for 40*s*. (payable in 'vance) or per copy 7*s*. 6*d*., payable to the Hon. Treasurer, P. Tate, 4 l Street Place, London, E.C.2.

CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, D. R. Calder, "Rustings", Madeira Road, West Byfleet, Woking, Surrey.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton and Holmesdale Press, 104 London Road, Sevenoaks, Kent.